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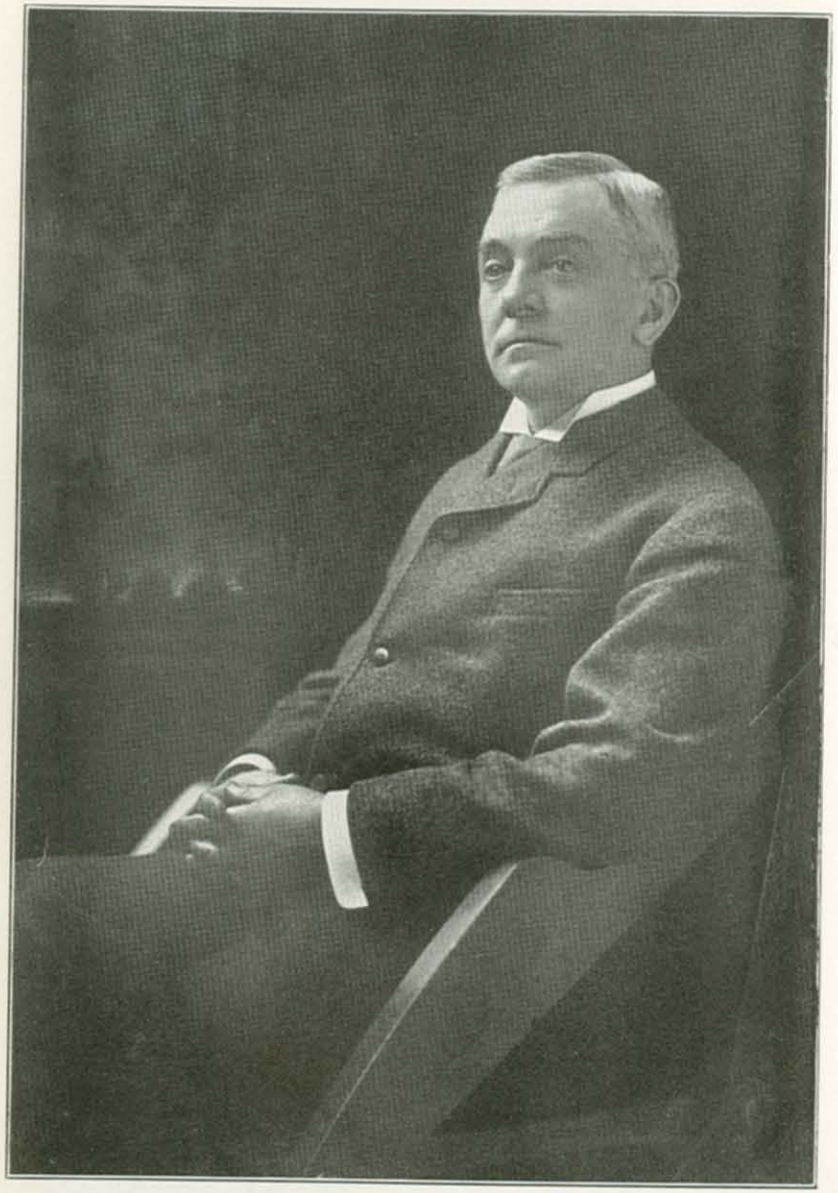

Hon. J. H. STOUT
FOUNDER STOUT TRAINING SCHOOLS

Vol. II. May, 1907 No. 2

BULLETIN OF THE STOUT TRAINING SCHOOLS

Announcements
of the Stout Training Schools for the
Year 1907-1908

Manual Training and Domestic Science Courses
in the Menomonie Schools

Costs of Materials for Manual Training
and Domestic Art

PUBLISHED QUARTERLY
BY THE STOUT TRAINING SCHOOLS AT
MENOMONIE, WISCONSIN

ANNOUNCEMENTS
OF THE
STOUT TRAINING SCHOOLS
FOR THE YEAR
1907-1908

Officers of Administration and Instruction

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FACULTY

L. D. Harvey, Superintendent of Schools; Psychology and Pedagogy; General Superintendent of Professional Work; Elementary Education.

Milton College, 1872. High School Principal, 1873-1879; City Superintendent, 1880-1885; Normal Schools, 1885-1898; State Superintendent, 1889-1902; Stout Training Schools, 1903-

George Fred. Buxton, Director of Training School for Manual Training Teachers; Drawing and Design; Organization and Management.

Pratt Institute, 1899; Teachers College, Columbia University, 1904. Teacher of manual training, Newark, New Jersey, 1899-1901; Portland, Maine, 1901-1903; Springfield, Massachusetts, 1904-1905; Stout Training Schools, 1905-

Howard D. Brundage, Bent Iron Work, Pottery, Elementary and Advanced Woodwork, Theory of Courses of Study.

Cabinet and Pattern Making and Building Trades, 1889-1898; Teachers College, Columbia University, 1900. Teacher of manual training, Stamford, Connecticut, 1900-1902; Hartford, Connecticut, 1902-1905; teacher of hammered metal and enamel work in Arts and Crafts Society, Hartford, Connecticut, 1902-1905; Stout Training Schools, 1905-

Leo Ammann, Wood Turning, Pattern Making, Forging, Machine Shop Practice.

St. Louis Manual Training School, 1893; Cornell University, mechanical engineering, 1897; Federal Polytechnikum, Zurich, Switzerland, post-graduate work, 1898. Teacher in St. Louis Manual Training School, 1901-1905; Stout Training Schools, 1905-

Louis F. Olson, Mechanical Drawing, Joinery, Manual Training Equipment.

Drafting and general shop work, 1902-1904; Stout Training School for Teachers of Manual Training, 1906; graduate student and assistant in woodwork and mechanical drawing, 1906-1907. Stout Training Schools, 1907-

Miss Laura G. Day, Director of Training School for Domestic Science Teachers; Food Materials and Food, Household Economy and Management.

Kansas State Agricultural College, 1893; post-graduate work domestic science, 1893-1894. Assistant in domestic science and arts department, Kansas State Agricultural College, 1894-1895. Teacher of domestic science and arts, Stout Manual Training School, Menomonie, Wis., 1895-1900; special lecturer and director of department of domestic economy, Purdue University, LaFayette, Ind., 1901-1902; Stout Training Schools, 1903-

Miss Nellie W. Farnsworth, Physiology, Foodwork, and Assistant in Domestic Economy.

River Falls Normal School, 1892; Stout Training School for Teachers of Domestic Science, 1905. Supervisor of music, 1893-1902; teacher Duluth State Normal School, 1903-1904; Valley City State Normal School, 1905-1906; Stout Training Schools, 1906-

Miss Mary A. Dunning, Domestic Art.

Pratt Institute, 1902; Teachers College, 1903-1904. Teacher Hackley Manual Training School, Muskegon, Mich., 1904-1905; Stout Training Schools, 1905-

Miss Anna K. Flint, Domestic Art.

University of Wisconsin, 1895; special work domestic science, Stout Manual Training School, 1898-1900; Teachers College, Columbia University, 1905-1906. Teacher of sewing and assistant in domestic science department, Stout Manual Training School, 1900; teacher of sewing and dressmaking, Stout Training Schools, 1903-1904; Stout Training Schools, 1906-

Miss Zella I. Perkins, Chemistry.

University of Idaho, 1903; graduate student, University of Chicago, 1905-1906. Assistant pure food department, University of Idaho, 1903-1904; teacher science, High School, Colfax, Washington, 1904-1905; Stout Training Schools, 1906-

Wm. Urban, Bacteriology, and Physics.

University of Wisconsin, 1904. Teacher science, High School, Sheboygan, Wisconsin, 1904-1906; Stout Training Schools, 1906-

Miss Alma L. Binzel, Director of Kindergarten Training School; Kindergarten Principles, Theory and Practice; History of Education; Supervision of Practice Teaching in the Kindergarten.

Kindergarten Training Department, Milwaukee State Normal School, 1894; student Teachers College, Columbia University, 1903-1906. Director of Model Kindergarten and Assistant in Kindergarten Training Department, Milwaukee State Normal School, 1895-1903; Stout Training Schools, 1906-

Mary D. Bradford, Supervisor of Primary Work; Theory and Practice in Primary Teaching; Inspection and Supervision.

Teacher Kenosha High School, 1884-1894; supervisor of practice teaching and director of Model School, Stevens Point Normal School, 1894-1906; Stout Training Schools, 1906-

Miss Cora Barron, Critic Teacher and Director of the Codington Kindergarten; Gifts, Stories, Games and Occupations.

Stout Kindergarten and Primary Training School, 1903; Indiana Kindergarten, and Primary Normal Training School, Normal course, Indianapolis, 1904. Director of Yandes St. Kindergarten, Indianapolis, 1904; Stout Training Schools, 1904-

Miss Mary Ehrhard, Critic Teacher and Director North Menomonie Kindergarten; Clay Modeling and Manual Work.

Menomonie Kindergarten Training School, 1900. Stout Training Schools, 1903-

S. H. Metcalf, Director of Music in Public Schools; Theory of Music, Note Reading, Kindergarten Songs, and Chorus Work.

G. A. Works, Nature Study.

River Falls Normal School, 1898; University of Wisconsin, 1904. Principal, High School, St. Croix Falls, Wis., 1899-1902; Assistant in High School, Menomonie, 1904; Principal, High School, Burlington, Wis., 1904-1905; Principal, High School, Menomonie, 1905-

Lelia Bascom, English.

Chicago City Training School, 1896; University of Wisconsin, 1902. Teacher of English, High School, Escanaba, Michigan, 1902-1904; teacher of English and History, High School, Fort Morgan, Colorado, 1904-1906; Stout Training School, 1906-

Miss Kate Murphy, Director of Art Department of Stout Manual Training School; Design and Illustration; House Decoration and Furnishing.

St. Louis School of Fine Arts, 1887-9. Director art department, Elmwood Normal School, Farmington, Mo., 1888-9; New York School of Technical Design, 1889-90; New York Studios, 1890-1892. Teacher of drawing in public schools of Chicago, 1893-1894; director of art department of Manual Training School, and supervisor of drawing in the Menomonie Public Schools, 1894-

Miss Louise Christiansen, Assistant in Art Department Stout Manual Training School; Drawing and Color Work.

Stout Training School for Domestic Science Teachers, 1905.

N. J. MacArthur, Director of School of Physical Training; Theory and Practice of Physical Training.

Collegiate Institute, Collingwood, Ont., 1886; Model School, Durham, Ont., 1887; University of Toronto, 1895; Harvard Summer School of Physical Training, 1896, 1899; Collegiate Institute, Owen Sound, 1900, 1901. Teacher, 1887-1889; principal of High School, Albert Lea, Minn., 1895-1896; superintendent of schools, Le Sueur, Minn., 1896-1897; director of physical training and instructor in athletics, State Normal School, St. Cloud, Minn., 1897-1901; Stout Training Schools, 1902-

Julia Bigelow, Assistant in School of Physical Training.

Normal School of the North American Gymnastic Union, 1906. Stout Training Schools, 1906-

THE EDUCATIONAL IDEA UNDERLYING THE MENOMONIE PUBLIC SCHOOL SYSTEM

THE question is often asked, "In what way, if any, does the work in the Menomonie public schools differ from that in the public school systems of other cities of similar size?"

In order to understand the distinguishing characteristics of the Menomonie School System, it is necessary at the outset to understand the conception of education which has formed the basis for its development. That conception makes education for the individual mean: The acquisition of knowledge coupled with the development of power and tendency to acquire further knowledge; a training in doing because of that knowledge, resulting in a clarifying and enlarging of the present knowledge with growth of power to acquire and apply knowledge in fruitful activities later on; further, a training in *being* as a result of *knowing* and *doing*, to the end that the product of the public schools shall be good citizenship. Such an education is the result of special training actively directed toward given ends, supplemented by the influence of environment.

For the results from special training and for the influence of environment we must look to the home, to the school, to society, and to the church. No one of these factors is entirely responsible for the final outcome. Each furnishes a part of the environment of the individual child. The home and the school are perhaps the factors most in evidence and most active in special training.

If the home fails as a factor concerned in the special training of the child or in furnishing its share of what is desirable in environment, then a larger responsibility devolves upon the school and upon the other factors named, or the individual and the community suffer.

It is the belief of those most directly concerned in the organization and development of the Menomonie schools that there is a lack of special training in the home, under existing social conditions, which is needed for the kind of education above indicated, and that no factor concerned in the

education of the child, unless it be the school, can provide this training. And since such training is regarded as necessary, the school therefore must undertake the work.

In the public school systems everywhere prominence is given to that factor of educational work summed up in *knowing;* and in the ordinary practice, the field of knowing is bounded by the curriculum of the common schools, requiring a knowledge of the ordinary academic subjects which have been the standard elements of the course of study for generations.

In some schools in recent years, this field of knowledge has been broadened to embrace something in the domain of things as well as in the domain of books. Formerly the *doing* was that which demanded mental activity with the least possible physical activity. To-day in many schools, that conception is being enlarged so as to demand physical doing, requiring mental direction and stimulus, and resulting in a training of the hand and of the mind and in a development of the body.

It is in this particular field that the Menomonie public school system has perhaps its distinguishing characteristic. In the organization of this system of schools the following things are recognized:

First, that impression to be effective must be followed by expression; that impression may come from other sources than from books; that expression may take other forms than that of words or figures, and that these added types both of impression and expression have a value in training, if not superior at least unexcelled by the older types of training.

Second, that in the life of the child after its schooldays are over, he will be concerned with those activities which deal with things rather than with books, with what men do and with what he is to do, rather than with what men say; and very much more with what men do to-day and what is to be done to-day, than with what men said and did a thousand years ago; and therefore that the training in the school which will early put the child in touch with things, and demands the activities essential in dealing with those things is a kind of training which directly fits him for his later work in life.

Third, that much of that which the child ordinarily acquires in school as a matter of knowledge has little value as knowledge; that whatever of gain there has been in its acquirement was in the effort put forth for such acquirement and in the resulting effect upon the individual in increased capacity for similar effort. It is believed that many of the facts which make up the body of knowledge ordinarily required may be safely omitted from the work of the school, and in place of the work necessary for their acquisition there may be substituted a training, which is essentially doing, and which will play a larger part in the efficient activities of the child in later life than would a knowledge of the omitted facts.

Fourth, that mental training results not solely from a study of what others have done and said, but that in the determination of what is to be done to-day, of how it shall be done, and in the control and direction of

physical activities employed in the doing, there is a kind of mental training unsurpassed in value by any other as a preparation for professional life or for work with one's hands.

Fifth, that as statistics show that ninety-two out of a hundred young people who complete the work in the grades below the high school in our public school system, subsequently earn their living and support those dependent upon them by the work of their hands, therefore the public school system which plays its proper part in the training of citizens and in the development of the highest type of manhood and womanhood must offer some training of hand, some training of mind through the training of the hand, some training toward the recognition of the nobility of manual labor controlled and directed by mental activity to useful end, if it is to do the best that can be done to fit these ninety-two people out of a hundred during the time they are in school, for their future position in life. To put it in other phrase, the training of mind through the training of the hand is unsurpassed by any other kind of mental training for the individual who is fitting himself for those professions demanding mental work chiefly, and it has a practical utility superior to any other kind of mental training for the individual who finds his after school activities in life in the field of manual labor.

Sixth, that a practical development of the physical organism is essential to the highest well-being of the individual and that intelligent, systematic, and persistent physical training in the schools will do much toward the development of such an organism and for the training of the child in the care of that organism.

Seventh, that in addition to mental, manual, and physical training it is desirable that there shall be a development and training of the aesthetic sense for practical uses and for the largest enjoyment of the individual. An appreciation of beauty in form and color, of harmony and fitness in dress and in the decorations and furnishings of the home, an appreciation of music coupled with practice in the art of singing, are acquisitions which will add to the comfort, usefulness, and happiness of the individual.

Eighth, that through reading, the mind may be broadened and stimulated and informed, provided the reading be of the right sort and done under proper direction and stimulus; that the school should not only train individuals to read, but that it should add to this power, such opportunity and training as shall develop the habit of reading, and a taste for reading that which is good in literature, so that whatever may be their position in life, they may find it possible, through the world of books, to bring their minds in touch with the minds of the great thinkers of all times.

Ninth, that the creation of right ideals and the development of good habits are an essential part in the education of any individual, and therefore the public school should intelligently, actively, and persistently work for the creation of these ideals and the development of these habits.

Adaptation of Menomonie Educational Idea to Other School Systems

The incorporation of the educational idea hereinbefore set forth as a potent force in the organization and administration of a school system, demands a material modification of what has been the standard school curriculum for so many years. This modification requires an elimination of non-essentials, acquisition of which is of little value for training and of less value as knowledge; and the substitution therefor of lines of construction work with material things, through the use of tools and by means of processes involving mental and motor activity essential for the proper development of the individual.

Such a modification of the curriculum, if wisely made, must be the outgrowth of a clear comprehension of educational needs growing out of social and industrial conditions; of an educational philosophy which recognizes the possibility of modifying educational effort to meet those needs, and the necessity for such modification; of skill in the application of such educational philosophy in the daily work of the teacher in the schoolroom; and of a wide range of experiments to determine the relative educational value of various lines of work.

The administration of the new features of the modified curriculum demands for the new lines of work—those combining motor with mental activity—specially trained teachers who appreciate the value of this work, who know how to give instruction in it, and who understand its relation to other phases of work in the school system.

THE STOUT TRAINING SCHOOLS

THESE schools are the outgrowth of the idea underlying the work in the Menomonie public schools. The results of the application of that idea through fifteen years of trial have justified it in the minds of those competent to judge.

The Training Schools thus have back of them a body of accomplished results in the public schools, and the training which they give is based upon a recognition of what has been accomplished in Menomonie, of what is being accomplished elsewhere, and of the fact that very much yet remains to be done, and very many experiments are yet to be tried, in order to develop the highest possibilities in industrial education. They are organized to provide facilities for the thorough preparation of teachers and supervisors in the fields of manual training, domestic art and science, kindergarten and primary work.

The work which each school undertakes to do in its field is threefold—academic, technical, and professional. The academic involves the mastery of the subject-matter of the courses, as a matter of knowledge. The technical involves a mastery of the handwork regarded as valuable for training purposes, as a matter of skill. The professional involves a study of educational principles and processes, and practice in applying them in the organization and administration of work in its particular field of educational effort, and a study of the relation of its special work to other phases of the public school curriculum.

While each of these three phases has a content of its own and receives special treatment, the professional phase permeates the entire work in the other two. It appears in the academic work when students are led to observe and consider their own mental processes; to determine the use to be made of the subject-matter in their subsequent work as teachers, and how they are to use it most effectively. It appears in the technical work as it proceeds when they are led to observe the order of development; to determine whether the particular order followed is essential or not; to note the character and relation of mental and motor activities appropriate and necessary for the proper development of the pupils they are likely to teach.

From beginning to end students are impressed with the idea that they must not only have accurate knowledge of the subjects they are to teach, and skill in the different phases of handwork, but that they must know how to teach others the things they are learning, and to train others to do well the things they are trained in doing.

While the student taking these courses will have the benefit of a far better equipment than can be provided in most systems of schools, they are trained with reference to the development of power and skill in organizing and carrying on work under such conditions as to equipment as can be supplied easily in a village or city school system.

Through the munificence of Mr. Stout, means have been provided for carrying on various lines of experimental work in industrial education in a city system of schools. These lines of work will be continued, new experiments will be tried and the results of these experiments will be available for training school students. Theories will be tested before they are accepted as established bodies of educational doctrine to be given to training school students. The aim of the schools is to fit teachers to do well what has already been proved to be worth doing, and at the same time to develop open mindedness and breadth of view which will lead them to consider, weigh carefully, test, and finally use what is valuable in the new.

General Information

Length of Courses

The courses leading to the diploma granted by each school require two years' work.

Graduate Courses

In each of the schools a graduate course of one year is offered. These courses are planned to meet the needs of teachers who wish to take more advanced work, both technical and professional, than is offered in the regular courses. They furnish excellent opportunities for those who desire to prepare themselves to teach these special subjects in professional schools, or for supervisory work in city systems of schools.

Qualifications for the Admission to the Training Schools

Graduation from a four years' high school course, or equivalent preparation, will be required for admission to each of the Training Courses.

The candidate must be at least seventeen years of age, and must be possessed of good health and physical energy, of natural fitness for the work, of refinement and good character. For admission to the Kindergarten Training Course some proficiency in music is desired, although students are not denied admission because of lack of such knowledge. Testimonials of good character are required.

Students who have had Normal School or Collegiate training will be given credit for such work in the courses they pursue as they have satisfactorily mastered. Successful experience in teaching before entering the Training School, in most cases, reduces the amount of practice teaching required of the student.

Expense

Tuition

The tuition fee is one hundred dollars per year, one-half payable at the beginning of each semester. A small fee will be charged to cover the cost of materials used by students in each department.

Cost of Living

Board and room can be obtained at prices ranging from four and a half to five dollars per week—in private families.

Bertha Tainter Hall

This Hall will accommodate about thirty young ladies. The Hall is furnished with all modern conveniences, the rooms are electric lighted, and heated both by direct and indirect radiation, thus assuring ample heat and good ventilation. A large reception room, a reading and study room for those who may prefer to study there rather than in their rooms, and a music room, are provided.

The Hall, three blocks from the school grounds, overlooks Lake Menomin, and is in the midst of spacious, well kept, well wooded grounds. It is the aim to make this an ideal home for such students as wish to avail themselves of its accommodations. The home is in charge of a woman of experience and culture, and such regulations and supervision will be maintained as will insure proper conditions for health, effective work and the proper social life of students. As the call for accommodations in the Hall is likely to tax its capacity, it will be necessary in most cases for two persons to occupy a room.

Room and board in the Hall is $5.00 per week.

Calendar for 1907-1908

First semester begins September 2, 1907; ends January 17, 1908.

Second semester begins January 20, 1908; ends May 29, 1908.

Holiday vacation begins December 21, 1907; ends January 4, 1908.

Spring vacation begins March 14, 1908; ends March 22, 1908.

Students should arrange to enter at the beginning of the school year if possible. When this is not feasible students may enter at the beginning of the second semester.

Demand for Graduates of the Schools

The demand for the graduates of the Stout Training School as teachers and supervisors of manual training, domestic science and art, and of kindergarten and primary work comes from all parts of the country and is steadily increasing. They are now employed in twenty different states. During the current year calls have come to the school for more than fifty teachers of manual training, a number far in excess of the supply.

The call for teachers of domestic science and art is greater this year than ever before, and the growing interest of the public in this work indicates a steady increase in the demand for some years.

The number of graduates from the kindergarten and primary training school has not been sufficient to supply the demand in any year since the school was organized.

Aid in Securing Positions

Every aid which can properly be given by the officers of the school will be extended to graduates in securing positions.

The Value of the Diploma

The diploma granted to graduates of the Stout Training Schools is recognized by the laws of Wisconsin as the basis for a life state certificate, legally qualifying the holder to teach the subjects in which they have taken training, in the public schools of the state. These certificates are accepted as a legal qualification for teaching these subjects in most other states.

Further Information

Address all correspondence regarding courses of study or general work of the Training Schools to

L. D. HARVEY,
Supt. Stout Training Schools,
Menomonie, Wisconsin.

COURSES OF STUDY IN THE STOUT TRAINING SCHOOL FOR TEACHERS OF MANUAL TRAINING

JUNIOR YEAR

First Semester

	No. Periods per Week	Number Weeks
Psychology	5	18
English	5	18
Manual Training Design	10	6
Elementary Woodwork	10	18
Joinery	10	12
Forging	10	18
Literature of Manual Training	5	9
Physical Training	4	18

Second Semester

Mechanical Drawing	10	12
Manual Training Equipment	10	6
Thin Wood Construction	10	9
Paper and Cardboard Work	10	6
Bent Iron Work	10	3
Elementary Woodwork	10	18
Wood Turning	10	12
History of Manual Training	5	6
Physical Training	4	18

SENIOR YEAR

First Semester

Freehand Drawing and Design	5	18
Weaving and Basketry	10	3
Clay Modeling	10	6
Cabinet Making	10	18
Machine Shop Practice	10	18
Literature of Manual Training	5	9
Organization and Management of Manual Training	5	9
Observation and Practice Teaching	6	18
Physical Training	4	18

Second Semester

Mechanical Drawing	10	18
Machine Shop Theory	5	6
Machine Shop Practice	10	12
Pattern Making	10	16
Moulding and Foundry Practice	10	2
Hammered Metal, Pottery or Woodwork	10	18
Courses of Study in Manual Training	5	6
Observation and Practice Teaching	6	18
Physical Training	4	18

GRADUATE COURSES

THESE courses are planned for teachers of manual training who have had a preparation equal to that given at the Stout Training Schools, and who desired advanced work along special lines.

Required Work

Manual Training Theory. A research and experimental study of the most important aims of educational handwork and of the general practice in public schools.

In connection with the public school classes of the city of Menomonie, where a thorough course in manual training, from the kindergarten through the high school, is given, opportunity is offered for a systematic observation of all phases of constructive work and drawing.

Decorative and Structural Design. This work presupposes adequate preparation in freehand and in mechanical drawing. The aim is to present the necessities of structure for different materials and uses as a basis for design, to show the application of principles of design to

different types of construction, and to indicate ways of teaching applied design in manual training classes in public schools. The work is an elaboration of the manual training design given in the regular courses. Strong emphasis is laid upon the quality of drawings made to illustrate the successive topics.

Advanced Mechanical Drawing. Projection drawing in its various phases is taken up thoroughly, and some of the more difficult geometrical problems are also worked out. Methods of work having the most general application are kept to the front, but alternate methods and checks are continually pointed out. The aim is to develop an ability to handle easily the high school work in drawing, to be able to solve any drafting problem that is likely to arise, and to see the application and value of technical ability acquired.

Practice Teaching. Opportunity is furnished for practice teaching along one or more of the lines of study undertaken.

Special Study

One of the following lines of special study is to be selected with the approval of the director:

Psychological and Pedagogical Aspects of Manual Training. Conditions of mental growth and the effects of definite handwork upon these conditions form the background for a study of nerve structure and action, habit, the relation of physical to mental training, the relationships between mental traits, the adaptation of manual training problems to pupils of different interests and abilities, and social aspects of industrial art work. Conferences and reports on assigned readings are the preparation for a final theme which treats fully one of the foregoing topics.

Correlations between Drawing and Construction. For those who expect to teach freehand drawing and design as well as constructive drawing and shop work, opportunity is furnished for charcoal, pen and ink, pencil, and water color representation and design, and suggestions given as to the planning of a correlated course in the manual arts.

Architectural and Machine Drafting. For the benefit of teachers who wish to specialize along either of these lines, or who desire an acquaintance with the general conditions underlying each of these fields, this work is offered. Detail drawing, planning and assembled work each has a place in the course.

Furniture Design. Problems in furniture design and interior decoration with a consideration of structural elements in their best proportion, is followed by applications of the panel and the curved line. A part of the work includes a study of applied ornament. All drawings are dimensioned and finished with a carefully executed wash.

Advanced Woodwork. Opportunity is furnished for those who wish to do extra work in cabinet construction, wood carving, wood turning, and pattern making in order to handle classes in these subjects with greater efficiency.

Advanced Metalwork. Graduate students may elect to do advanced work in the machine shop in making and assembling parts of machines, or work in hammered metal and enameling.

OUTLINES OF MANUAL TRAINING COURSES

THE following is a general outline of the training courses offered in the regular course for the preparation of manual training teachers.

The outlines of the courses here given are subject to such modification as experience may show to be desirable, without reducing the total time required.

Handwork for Primary Grades

Paper and Cardboard. Paper cutting for illustration work and as a study of form and design leads to the use of paper and cardboard as materials of construction. Small booklets of different sizes and shapes are made from various papers, the covers decorated, and drawings, notes, clippings, illustrations, and other school matter mounted within. This leads to simple bookbinding. The cardboard box and filing case as adapted to the first four grades are made in several styles. Simple pieces, such as photo mounts, postal scales, envelopes, and paper sacks, labels, and bookmarks are made from single pieces of paper, tag board, and bristol board.

Clay Modeling. After the use of clay in representing forms of solid structure, in modeling from objects, and in the study of relief ornament, the time is given to building up small pieces of pottery. Different methods of handling the clay are practiced in the making of four bowl or saucer forms. The use of incised design is illustrated in the decoration of a tile. Three types of candlesticks lead to the making of three types of vases and a jar with cover.

Weaving and Basketry. Through the use of paper strips, yarns, raffia, grasses, rope and rattan, the processes of interlacing materials to form various textile patterns and basket forms are illustrated.

The weaving models include paper mat weaving as a study of the building of designs through different interlaces, weaving of a small cotton towel on a carboard loom, a wooden rug on a simple wooden loom, and a larger rug upon a more complex loom.

In basketry, several raffia, rope and rattan coil stitches are worked out and applied in the making of small baskets. The rattan and splint baskets are made from individual choices of shapes.

Thin Wood Construction. Problems in selecting, assembling, and fastening with glue and brads strips of thin wood to form pieces of furniture, boxes, and bird houses are given, with methods of class presentation and ways of preparing materials for class work. Combinations of cardboard and wood are also considered.

Handwork for Intermediate and Grammar Grades

Woodwork. Exercises involving the use of simple hand tools are presented in such a way as to prepare the student for teaching wood processes in elementary schools. The principles and practice of knife and bench sloyd, the possibilities of the art crafts, the suggestion of engineering and industrial problems, and the correlation with physics, mathematics, and art are all made bases for the course in wood.

The work designed for the fourth and fifth grades is planned for block plane and knife where bench facilities can be provided and for knife alone where the work must be done at the regular class room desks.

The work designed for sixth, seventh and eighth grades is planned for the room with special equipment of benches and tools. In involves the use of the saw, the squaring up of stock with the plane, the various cuts with the chisel gauge and spoke shave, the use of the brace and bit, different joints and ways of fitting and fastening, methods of finishing and polishing. A regular sequence is planned for about five-sixths of the course and opportunities are given for the making of projects to be designed by the student.

In connection with this course a theory course is given in Materials and Types of Construction in order to give the student a broader view of his work. The general nature and appropriate uses of manual training materials are considered, and reports are required on typical industries and manufacturing processes. Tests, experiments and observation trips will be made.

Pottery and Cement. The elementary pottery for primary grades is continued into more advanced work in the making of decorated fern boxes, soap and match holders, pitchers, sugar bowls or tea pots, large jars and vases. The preparation of clay for class use, the moulding and decorating of pottery, the placing and firing of the kiln, and the use of glazes form the principal part of the work. Wheel work and casting in plaster are explained and opportunity furnished for individual practice.

The work in cement includes a study of the properties of the different compositions, and the making of arches, bridges, piers, walls, and tiles on a small scale.

Bent Iron and Sheet Metal. A knowledge of the properties of metals as differing from other structural materials may be obtained in the grammar grades through the manipulation of thin iron. The principles of constructive and of decorative design are considered in each model. The regular models are the grille exercise or mat, mail receiver, hammered tray, fern dish, candlestick, lantern, bracket, chain, Warren bridge truss and Pratt truss, and other types of structure. Original designs are required for the decorative problems. Supplementary free work is also required.

Woodwork for Secondary Schools

Joinery and Cabinet Making. The course in joinery consists in making a series of accurate cabinet making joints. These are applied in the construction of pieces of furniture, experimental apparatus, and special types of structure. At least four applications of the exercise pieces must be made by every student. The proper use and care of a full set of woodworking tools form the basis of the course.

Wood Turning. The course in wood turning consists in making a series of exercise pieces which give a familiarity with wood turning tools and lathe operations, followed by a series of finished pieces in hard wood which bring in centre turning and face plate work, fitting, chucking and polishing.

Pattern Making. The work in pattern making aims to give an acquaintance with pattern making processes and considerations necessary to successful molding. An exercise pattern is made to show the more important principles involved, and then split patterns and cored patterns of various types are introduced so as to involve bench work with chisel and plane, lathe work, and cutting to an irregular template. Core boxes for some of the patterns are made and built up work is introduced.

Wood Carving. Exercises in wood carving are first presented, which form a sequence of practice pieces in soft wood. These practice pieces are planned so as to develop a facility in handling the carving tools, and give an acquaintance with the different cuts involved in grooving, sinking the background, modeling concave and convex surfaces. These exercises begin with straight and are followed with curved line designs for units of ornament upon a square piece of board. The carving of small panels in hard wood, which follows the exercises, is applied as a decoration to cabinet constructions made by the student. Different kinds of treatment adapted to geometrical designs, conventionalized natural forms, and naturalistic elements are illustrated.

Metal Work for Secondary Schools

Hammered Metal Work. This work is adapted to high school classes where time can be put upon the art crafts. The processes used will be: hammering up over a stake, pounding into a hollow, sawing and filing, soldering and riveting, annealing, coloring, and polishing, engraving and enameling. Continual emphasis will be laid upon the making of good forms, and the working out of suitable decorations and surface effects. Good workmanship will be insisted upon. In the choice of materials, copper and brass sheets of varying thicknesses and copper tubing will be the metals most used. Sheet sterling silver of several gauges will be on hand, however, for those who wish for this form of work.

This course will not be given until students have completed requirements in woodwork.

Molding and Foundry Practice. The work in molding shows the necessity for carefully considering draft and shrinkage in the making of patterns. Practice is given in ramming flasks for different kinds of patterns, in gate cutting and venting, and in the setting of cores. Visits are made to local foundries for the study of shop methods.

Forging. The course includes a description of appliances, with explanation of their operation and a consideration of the uses and care of the different tools and materials used in forging. The necessary processes of working iron, drawing, forming, upsetting, bending and twisting, scarfing and welding are taught. In the making of steel tools, the processes of hardening, tempering and annealing are added.

Machine Shop Theory and Practice. The object of the practical work of this course is to teach fundamental operations in bench and machine tool work. This is accomplished by making a number of exercises, the construction of which involves the typical use of one or more tools. The exercises illustrating lathe practice include the following operations: turning plain cylinder, Morse taper, right and left hand thread cutting, bolts and nuts of standard dimensions, turning shafts for running, shrink, key and drive fits, chucking work, boring and use of reamer, finishing work on mandrel, cutting key ways on shaper and on milling machine, turning a lathe center using taper attachment of lathe, making a jack screw illustrating face plate work. On the shaper and planer, exercises are given in plain and angular planing. In bench work, exercises are given in chipping, filing, and scraping, and in the use of hand taps.

The theoretical side of the course includes lectures, demonstrations, and discussions of the following:

Selection and installation of equipment. Theory of cutting tools; angles and shapes of cutting edges, roughing and finishing, spring of work, chattering. Cutting speeds and feeds; relation between feed and material

being cut, use of self-hardening steel. Thread cutting; kinds and uses of threads, threading tools, change gears, taper threads. Tapers; kinds, dimensions, and uses, taper calculations, taper cutting. Milling machine work; classification of operations, advantages of this kind of work, grinding cutters, adjustments of machine, lubrication, indexing, special uses. Gear calculations; definition of terms, systems of gearing, gear cutting. Methods of measuring work; use of gauges. Methods of fastening work on shaper and planer. Making and using jigs.

Drawing and Design

Freehand Drawing. Practice is given in drawing from flowers, from pose, from parts of machines, and from photographs and drawings, to develop an ability to use the pencil and chalk readily in representing mechanical constructions and decorative elements.

Manual Training Design. Part I. (a) The rectangle as an area is studied. It is divided by vertical bands, and variations are then made as to width of bands, distance between them, number of bands, and arrangement of light and dark areas. Other rectangles are divided by crossing bands and variations made as in the first exercise. Others are divided by border bands, and still others by small inner rectangles. After each series of sketches a selection is made and used as a basis for lines of emphasis in a finished drawing of a box, cabinet, or other manual training model. (b) The possibilities of slanting bands, triangular and rhomboid forms are next worked out in the same manner as that of the rectangular forms. (c) A more abstract study of the principles of design as applied to the rectangle is made and worked out with several examples. This is followed by (d) a study of different kinds of lines, applications being made to free non-rectangular forms and also used as decorative ornament. (e) Units of ornament are studied as used by different peoples and for various purposes. The limit of adaptibility of types of design to types of construction is constantly pointed out. Throughout the course the use of design to enhance structural features rather than to hide them is kept clearly in mind.

Part II. Typical problems in paper and cardboard, weaving basketry and leather, wood, ceramics and metals are worked out in pencil, pen and ink, and wash. Full sequences of models for courses of study in the different materials are planned for assigned grades. In this work application is made of the study of Part I.

Mechanical Drawing. Part I. A course of drawings is given that will enable students to acquire: (a) proficiency in the handling of drafting instruments; (b) knowledge of conventions and methods in drafting room practice; (c) an understanding of the idea of projection and the making of working drawings; (d) the ability to make and use diagrams; and (e) elements of architectural and machine design.

Part II. Drawings for high school classes are presented in a way to meet the demands of those schools which aim to prepare their students for higher technical schools, for machine drafting, or for architectural drafting, and for those which desire to give a broad course in drawing. The course includes: (a) advanced work in projection, descriptive geometry, and perspective; (b) machine details and assembly drawings; (c) architectural details and plans; and (d) the working out of a course in mechanical drawing for public school classes.

Professional Work

Psychology and Pedagogy. The work in psychology and pedagogy is taken at the beginning of the Junior year and is limited to a consideration of principles, fundamental in character, and to the application of these principles in the actual work of teaching. Time will not permit the study of psychology as a culture subject. The students who have so studied it, but have not given consideration to the application of its fundamental principles in teaching, will need to take the prescribed course.

Special attention is given to the psychology of attention, habit, and will.

Those principles of pedagogy are considered which may be shown to have a practical application in the teacher's work. In the academic, shop, and laboratory work, it is the aim of the teacher not only to have students master the special work under consideration, both from the academic and the technical standpoints, but at the same time to consider the work from the standpoint of the teacher. Practical exercises are given throughout the course, requiring a conscious application by students in their work of the psychological and pedagogical principles studied.

Observation of Teaching and Practice Teaching. In the Senior year the students are required to systematically observe the work of experienced teachers in conducting classes in their respective lines of work in the public schools. The observation work is under the direction of members of the training school faculty. The observation required is not simply a "looking on;" the teachers in charge direct the attention of the observers to definite aims, methods, and results. Methods of different teachers in the instruction and control of classes are studied, not to be copied, but to determine how far they are based on sound pedagogic principles. The work under observation is discussed by those observing and the teachers in charge of the observation classes. Weaknesses are pointed out and the reasons for the weakness shown from a pedagogic standpoint. The strong work is noted and the reasons for its strength discussed. The aim is to make students familiar with the application of psychological and pedagogical principles through a careful observation of the various ways in which these principles are applied by different teachers in different phases of the work. After the observation work has

been continued for a reasonable time, students are put in charge of classes and are given practice in teaching in different grades. Before beginning practice teaching in any grade, students are required to thoroughly familiarize themselves with the work outlined in the course of study for that and lower grades and by observation of the class, to determine what progress has been made in the course and what are the next steps in order. Before taking charge of the classes, they are required to prepare definite plans indicating the proper order of procedure. The practice teaching is done under the supervision of the special teacher of the particular line of work in which the instruction is given. In the class work of the regular teachers in the training schools, an effort is made to bring into the consciousness of the students the pedagogical principles upon which the work there is based.

Organization and Management of Manual Training Classes in Public Schools. By means of lectures, discussions, essays, and written reports, the aims and practices concerned in carrying forward a complete course in manual training for a city system of schools is studied. The following topics are considered:

The relation of manual training exercises to mental development.

Manual training as a culture subject.

The value of manual training as a preparation for earning a livelihood.

The relation of manual training practice to general educational practice and possibilities of correlating the two.

Individual and class instruction and the proper control of classes in manual work.

The work of the manual training specialist as an organizer, as a class teacher, and as a supervisor.

History of Manual Training. By means of lectures, assigned readings, and reviews, the following topics are considered:

Historical educational theory as related to school handwork.

Present tendencies in the development of manual training.

The history of the Swedish sloyd movement.

The Russian system of tool instruction.

The influence of the art crafts movement upon manual training.

Manual training in the United States and in foreign countries.

Courses of Study in Manual Training. Through a study of manual training exercises, sequences, and general practices as indicated in school catalogs and circulars, and after becoming familiar with the recent history of manual training and its diverse aims in different localities, a course of study is planned for elementary classes, involving a variety of materials and processes, and yet with a continuous aim and carefully graded steps. The practicability as to teaching in public school classes is made an important element in determining the value of any educational scheme of hand work.

Manual Training Equipment. A study is made of different qualities of tools and fittings adapted to school handwork, with drawings of benches and cabinets, sketches showing arrangement of rooms, and building plans; specifications and estimates of costs for equipment for different kinds of work are made.

Literature of Manual Training. Oral and written reviews are required of books containing matter pertaining to the industrial aspect of education, books dealing directly with manual training, magazine articles relating to public school handwork, and published reports of associations.

English

The aim of this course is to present such phases of composition work as will give the student a command, both in speaking and writing, of simple, correct and clean-cut English. The special topics considered vary with the needs of particular classes, but in general they may be designated as: grammatical forms; sentence structure; choice of words; social and business correspondence; the preparation and organization of literary material.

The work is closely correlated with that in other departments and is based on long and short themes, talks, discussions, and papers presented by members of the classes.

A special feature of the work in English is the training in oral exposition and description. The tools and materials used, processes employed, and products completed in the construction work furnish many of the topics for these exercises. This work is continued throughout the course for the purpose of developing ease, facility, and accuracy in the students' subsequent use of English as a teacher in the class-room.

Physical Training

Regular work in the gymnasium will be taken throughout the course unless students are excused by the director for cause.

Electives

Electives in literature, work selected in the domestic art and science courses or in drawing, will be taken the equivalent of one hour daily throughout the course. In the selection of electives, students will be expected to advise with and secure the approval of the director of the training school.

DOMESTIC SCIENCE TRAINING COURSES

JUNIOR YEAR

First Semester

	No. Periods per Week	Number Weeks
English	5	18
Psychology and Pedagogy	5	18
Mechanical Drawing	3	18
Inorganic Chemistry	6	18
Food Study	5	18
Sewing—Model	4	18
Cooking	6	18

Second Semester

Physiology	5	12
Home Nursing and Emergencies	5	6
Freehand Drawing	6	18
Organic Chemistry	6	18
Food Study	5	18
Sewing—Model	4	18
Sewing—Plain	3	18
Cooking	4	18

SENIOR YEAR

First Semester

Household Management	5	18
Biology	6	14
Physics	6	4
Dressmaking	6	18
Millinery and Art Needlework	4	18
Textiles	2	18
Cooking	6	18
Household Decoration (optional)	10	18
Observation and Practice Teaching		18
Cardboard Construction (optional)	4	18

Second Semester

Dietetics	4	12
Organization and Management	4	6
Physiological Chemistry	7	18
Food Adulterations	2	12
Dressmaking	6	18
Millinery and Art Needlework	4	18
Cooking and Serving	6	18
Household Decoration (optional)	10	18
Observation and Practice Teaching		18
Primary Handwork	4	18

GRADUATE COURSES

A THIRD year or graduate course in domestic art and domestic science is offered. This course is planned for teachers of domestic art or science who have had the courses in the Stout Training Schools or equivalent preparation, and who wish to specialize in particular lines or to fit themselves for supervisory work. The year's work is elective, the elections being made in each case with the advice and consent of the director of the training school.

Science

A year of science work will be offered in either course. The work of the first semester will be in organic chemistry. The second semester will be devoted to special food or fibre chemistry, and to the investigations of special phases and problems of domestic science and domestic art.

Dietetics and Dressmaking

Advanced work in these subjects will be offered for students having the necessary preparation.

Professional Work

This course involves a consideration and application of educational principles in the organization and administration of courses of study in domestic science and domestic art.

Interior Decoration and Artistic Home Furnishing

The instruction given under this head will include work in applied design, house planning, interior decoration and furnishing.

It is the aim in this course to so plan and carry out all the work as to meet the actual needs of every woman responsible for the furnishing and decorating of her house, whether much or little money is to be expended, and to this end, no effort will be spared to impress upon students the necessity of an understanding of the underlying principles of true decorative art as the only possible foundation for good work, and to lead them to recognize the fact that perfect decoration is a matter of taste always, but not necessarily one of money. Art can and should be introduced into the homes of all, and large expenditure is not essential. To-day beauty and cheapness so often go hand in hand that the claim that one cannot afford artistic things no longer holds, for a good article costs no more than an ugly one of the same kind, and to the purchaser, the power to discriminate between good and bad in form, color, construction, and finish means infinitely more than unlimited means. A few good things, each suited to the other, are far more to be desired than a multitude of rare, beautiful, and costly articles having no relation to each other. Overcrowding and overdecorating are the worst features of the present day home, and these deplorable conditions will be changed only when people are brought to a realization of the fact that art does not demand a lot of superfluous things, neither does decoration, as too many suppose, necessarily imply ornamentation. Simplicity of taste, good judgment in selection, and artistic arrangement are the most that will be required. With these, much is possible with little money; without them, much money is of doubtful value in the creation of the restful,—the truly artistic interior. The scope of work includes a study of the following:

Applied Design will consist of a systematic course in design with special reference to household art, and a practical application of its principles to interior decorations and furnishings. Original designs by the pupils, after being drawn and executed in color, will, as far as advisable, be carried out in suitable materials.

Color and Color Harmonies will be carefully considered as relating to interiors:—the effect of light upon colors and the effect of colors upon the light of a room; the relations of colors; appropriate color schemes for each apartment and for an entire house; the effect of colors upon the eye, and the mind.

House Planning will include: original floor and wall plans involving a study of the best possible arrangement of rooms within a given space; consideration of the proper dimensions of rooms; proportions; best axial arrangement; the best distribution and placing of windows, doors, fire places, stairways and closets.

Interior Decoration will deal thoroughly and consistently with the subject of walls as to color, space divisions, kinds of coverings, appropriate designs; floors—kinds, best treatment, and coverings; windows—uses, desirable curtains, and draperies; doorways and openings; hangings and decorative articles.

Furnishings will relate to the study of furniture—historic and modern, with special reference to adaptation of form to use, beauty of form, materials employed, finish, harmony and cost.

OUTLINES OF COURSES IN DOMESTIC SCIENCE, ART AND ECONOMY

Food Study and Its Preparation

THE course in Food Study and its Preparation is intended to give a thorough understanding of the character, value, use, and preparation of food materials. The course involves a study of:

The Human Body. Its general structure and physiology. The structure and functions of the lungs, organs of digestion, absorption, assimilation, and excretion are studied with special reference to the physiology of nutrition, particular emphasis being placed upon the relation of pure air, pure water, and good food to the perfect development of the human organism.

A study of the physiological uses and effects of the various foods, and the correct proportioning of food material that physical development may be normal, follows the study of foods proper and completes the study of the human body.

Food. Its definition, properties, and classification. In this treatment of the subject, food is studied with reference to its chemical and physical properties, and is then classified according to its composition and uses in the body. Each food class, i. e., proteids, carbohydrates, fats, and mineral substances, is discussed with regard to its composition, digestion, food value, forms, and sources of supply. Supplementary to this, experiments are made to test the effects of hot and cold water, acids, alkalies, and various degrees of heat upon these classes. General principles underlying the correct use and preparation of food are discovered from this study and experimental work.

Food Stuffs. Their production, market value, appearance, selection, and care.

The study of the production of food stuffs includes the manner of growth of food materials used in their natural state or manufactured into common articles of food, and processes of manufacture where practicable. Food adulteration is treated from the scientific standpoint, tests for impure foods being taught in the chemical laboratories as part of food chemistry. Distribution, transportation, and preservation of food stuffs are discussed with reference to their effects upon the uniformity of the food supply and upon market prices.

Market appearance and selection are taught by means of visits to markets and shops, and by actual selection of materials to be used in the preparation of food. The study of the care of food material is supplemented by practical application in the care of material used in the school.

Cooking of Foods. Plain, fancy, and invalid.

The cooking courses are supplementary to the courses in the study of foods and food material, and follow them as closely as possible. Reference has been made under "Food" to the experimental work that precedes actual preparation of foods.

Plain cooking includes the preparation of simple foods, such as cereals, fruits, vegetables, meats and eggs. It also includes some of the simple food combinations, soups, breads, cake, etc. Emphasis is placed upon the intelligent and thorough preparation of ordinary materials.

Fancy cooking includes the preparation of more complex foods, salads, ices, pastries, and fancy desserts. Attention is given to garnishing and decorating foods, and to the preparation of foods for special occasions. A short course in chafing-dish cookery completes the course. In this course, emphasis is placed upon exactness, finish of work, and tasteful and suitable food combinations.

Invalid cooking is so treated that the student receives a general idea of the use of foods in sickness, and the application of dietetic principles in preparation of food for the sick. As the general course in cooking gives a thorough knowledge of foods, such a course is not necessary as would ordinarily be given in Invalid Cooking. The course includes liquid diet, use of milk, soups, koumiss, egg-nog, etc.; convalescent or semi-solid foods, eggs, omelets, preparations of meat; flour mixtures, gluten gems, wafers, whole wheat, graham; jellies and creams; frozen desserts. Attention is given to the preparation of the invalid tray and the manner of serving foods to the sick.

Serving of Foods. Nutritive values, combinations, and cost. This course is planned to give a working knowledge of the nutritive value of our common food stuffs. It shows how they may be combined to give the correct nutritive ratio, and how they may be served to present an attractive appearance. The cost of food materials is studied at the same time, that there may be a comparison of cost and food value. This work is carried out by each member of the class planning several meals, buying the materials, superintending the preparation, and serving the meals. The food is selected with reference to the occupation of those who are to eat it, it is combined in the correct proportions, and must be purchased for a given amount that the greatest possible food value may be obtained for the money expended.

Dietetics

The course in Dietetics requires preliminary courses in Physiology, Chemistry and Food Study and its Preparation. Its object is to teach the specific uses of food in the body, and the conditions under which the human organism exists, including the relation of diet to age, occupation, climate, habit of life, and disease.

The Uses of Foods. Its relation to perfect development.

This is largely a review of the work previously done in Physiology and Food Study, and includes the study of the course of each food element in its progress through the body. The functions of the various organs and tissues of the body are studied, and their necessities in the way of food, that they may perform their functions properly. The digestion of foods, the chemical and physical changes that take place in digestion, food absorption, circulation, assimilation, excretion or storage, all are studied with reference to the supply of foods to the body meeting its demands.

Diet in Health. Relation of diet to age, occupation, climate, and season. In the study of diet for different ages and stages of development, the physiological conditions and conditions of environment peculiar to each age are considered, and the kind and amount of food are modified to suit these conditions. Occupation requires a similar treatment. The tissues of the body used in the work, the environment, and the amount and kind of exercise will govern the amount of food and its proportioning. Climate and season influence the diet quite materially, necessitating the same attention to physiology and environment as that required by age and occupation.

Diet in Disease. In the treatment of this subject, diseases are grouped as nearly as possible according to their dietetic treatment. The abnormal conditions are studied, and food selected that will as nearly conform to the necessities as it is possible to have it. More time is devoted to the study of digestive disorders than to any other group of diseases, as many diseases are the result of poor digestion and assimilation. Invalid Cooking is supplementary to this course.

Home Nursing and Emergencies

This course is based upon a systematic knowledge of anatomy, physiology, and hygiene. Its object is to teach the relation of these sciences to practical treatment of simple ailments of the human body, and to physical emergencies wherever they may arise.

Home Nursing. This includes discussion of the subjects treated and demonstration, when possible, of methods employed. The subjects treated are the sick room, its location, furnishing, and care; beds, their making, changing, and appliances; baths, kinds and effects; disinfectants, nature and use; infectious and contagious diseases, disinfection and general

precautions; inflammations, reduction and treatment; taking of temperature, respiration, and pulse.

Emergencies. Some of the subjects treated are fractures, dislocations, sprains, hemorrhages, burns, wounds, fainting, hysterics, sunstroke, frost bites, antidotes for poisons, uses of bandages, and artificial respiration.

Chemistry

Inorganic Chemistry. This course aims to cover the most essential chemistry of about twenty-five of the commoner elements. In the beginning of the study, special attention is paid to the compound, the element, the atom and molecule, chemical action, affinity, valence and atomic weight. The non-metals are then studied. These are studied with special reference to their occurrence and properties emphasizing the acid forming properties. After the non-metals, the commoner metals are taken in order. Here special attention is paid to the salt, alkali, and neutralization. It is always the aim to point out those properties and reactions which may have bearing upon practical questions.

Food Chemistry. In dealing with the three principal organic food elements (carbohydrate, hydrocarbon, and nitrogeneous foods), both the chemical composition and those conditions which affect chemical changes in them are considered.

Among the carbohydrates cellulose, starch, dextrin, and the sugars are studied with reference to the action produced by heat, acids, and ferments. Alcohol formation and acetic acid serve as a transitional group leading to a study of the hydrocarbons. Here butyrin, palmatin, stearin, and olein are considered together, with such changes as are produced upon them by the action of acids and caustics. Along with the theoretical treatment of carbodydrates and hydrocarbons, there is given a review of the following industries: The starch industry, glucose manufacture, sugar refining, malting, alcohol making, vinegar making, and the soap industry. The nitrogeneous foods are studied in the order given in Cohnheim's classification, more attention being paid to the physical and physiological properties than to the chemical structure.

The last six weeks are devoted to the analysis of a complete food as directed in Bulletin No. 46, Revised, U. S. Department of Agriculture.

Biology

Three phases of biology are touched upon in this course. In plant physiology a study is made of the activities of plants which have bearing upon synthesis of the food elements. After this, the problems of nutrition and growth are studied in connection with both plant and animal tissue. This study is followed by a systematic study of plant families, according to their bearing upon the question of food supply and other economic problems. The work upon bacteriology is done in this connection.

Physics

During this semester there is given a brief course in the physics of heat and light. The principal topics discussed under heat are, heat and its relation to other forms of energy, expansion produced by heat, transfer of heat, specific heat, change of state, and heat of combustion.

In the work in light, the time is devoted to a study of the wave theory of light, velocity of light, propagation of waves, intensity of light, candle power, reflection, colored lights and pigments, refraction of light, and lenses.

Physiology

This course is intended to give a thorough preparation for Food Work and Dietetics, and is followed by Home Nursing and Emergencies. A study is made of the physical structure and chemical composition of the human organism beginning with a single cell. The main subjects considered are: A study of blood manufacture; the circulatory, respiratory and nervous systems; bony and muscular tissue; structure and function of the organs of excretion.

Domestic Art

Plain Sewing. The course in plain sewing is intended to give a knowledge of the operation and application of ordinary plain sewing, to develop skill, and to provide a course of instruction and a series of models that may be made use of in teaching sewing in elementary and secondary schools.

Models. This course includes the making of models showing the various stitches, seams, and operations of sewing; the repairing of garments, darning, patching, etc.; and the application of the principles and processes learned, to the making of various original pieces. Work of this course is all hand work.

Garments. This course includes the making of one set of model undergarments by hand. The patterns are reduced to one-third of the standard size, and the small garments are trimmed in various ways to teach methods of using trimmings. In addition to this, a set of standard size garments is made. The patterns are drafted from measures; the seams are made on the machine, and the trimming is chosen by the pupil. The purpose is to develop skill in the use of materials, and ability to use the machines intelligently and skillfully.

Dressmaking. The purposes of the course are to show the application of principles and processes already learned to the making of garments, to teach the assembling of materials into a harmonious garment, and to teach the art of dressmaking.

Models. The course includes the making of such models as are necessary to the development of the subject for purposes of instruction in public schools, and to a thorough understanding of the work in hand. Some of the models used are waist and skirt plackets, finishes for the bottoms of skirts, seams and finishings for waists and skirts.

Drafting. Simple drafting from measures includes the drafting of tailored shirt-waists. Tailor drafting includes the drafting of fitted waists and skirts, and the drafting and fitting of a plain waist model.

Garment Making. This includes the drafting, fitting, and finishing of the following garments: a tailored shirt-waist, cloth skirt, fancy cloth or silk waist, and a summer dress. Such time as may remain from the regular course is utilized in making such garments for personal use as the skill of the pupil may warrant.

Millinery. This course is intended to serve the same purpose in the development of skill as is served by the other courses in Domestic Art. At the same time, the art of millinery is taught, and the possibilities of the subject as a public school course shown.

Fall Millinery includes the renovating of ribbons, velvets, silks, and felts; the renovating and changing of felt shapes; the making of buckram frames; the making of bandeaux, linings, and folds; wiring, binding, and trimming.

Spring Millinery includes the planning and making of wire frames, and the making and trimming of straw, embroidery, and lace hats.

Art Needlework. Throughout the regular courses of sewing, considerable attention is given to the application of fine needle work to articles of use. In the Art Needlework course this application is made to garments, hats, toilet accessories, and to table and household linen. The following lines of work are taught: hemstitching; drawn-work; faggoting, plain and Bermuda; and embroidery, Danish, Mountmellick, French, eyelet, and shadow.

Textiles. The course in textiles includes a brief study of the development of the industries pertaining to household art, weaving, spinning, and a closer study of the four textile fibres, cotton, flax, wool, and silk. The study of the fibres includes discussions of the fibres themselves, methods of manufacture, including processes of weaving and dyeing, selection of materials according to wearing qualities and suitability, comparison of cost of various materials, and the expenditure of money that best results may be obtained for money expended in buying fabrics.

Household Management

The course in Household Management is comprehensive in character, and is planned to give an understanding of the relation of some of the common sciences to the care of the home, and to give a practical knowledge of the various operations necessary in the management of a home.

House Sanitation. The study of location, draining, plumbing, heating, lighting, and ventilating.

Cleaning and Cleansing Agents. A study of the various cleansing agents, their chemical character, and effects upon fabrics, woods, and metals.

Marketing and Shopping. A course to give practical information in the selection of materials used in the household, their cost, and care.

Care of Materials. Clothing and house furnishings.

Serving. Taught by means of a practical application of the principles of table laying and decoration, and correct service of food.

Relation of Income to Expenditure. The study of cost of furnishing, clothing and provisioning.

The Systematic Arrangement of Household Duties. A thorough system in managing the affairs of the household, and plans for such arrangement.

Furnishing and Decoration. The fundamental principles of good furnishing and decoration, and their application to house decoration and the selection of furniture.

Professional Work

The Professional Work is considered under the following heads:

Psychological and Pedagogical Principles in their application to the teaching of Domestic Science.

Observation of Teaching and Practice Teaching throughout the Senior Year.

History and Literature of Domestic Science in its development as part of a school course.

Organization and Management of Domestic Science and Art classes in the public schools.

See "Professional Work" in Manual Training Courses.

English

See "English" in Manual Training Courses.

Physical Training

Opportunity is offered for physical training in regular classes in the gymnasium.

Electives

Electives in literature, work selected in the Manual Training Courses or in Drawing will be taken the equivalent of one hour daily throughout the course. In the selection of electives, students will be expected to advise with and secure the approval of the director of the training school.

KINDERGARTEN TRAINING COURSES

JUNIOR YEAR

First Semester

	No. Periods per Week	Number Weeks
Psychology	5	18
Expression	5	8
Music	5	10
Kindergarten Technics	5	18
Kindergarten Observation	2	10
Nature Study	3	10
Drawing	10	8
Physical Culture	2	18

Second Semester

Composition	5	10
Kindergarten Theory	5	8
Kindergarten Technics	10	8
Ethics	3	10
Nature Study	2	10
Mechanical Drawing	5	8
Music	2	10
Kindergarten Observation	3	10
Chorus	1	18
Physical Culture	2	18

SENIOR YEAR

First Semester

Primary Pedagogics	3	18
Kindergarten Principles	5	10
Child Study	5	10
Literature	5	10
Kindergarten Teaching	15	8
Physical Culture	2	18
Chorus	1	18

Second Semester

Primary Pedagogics	3	18
Literature	5	8
History and Literature of Education	5	10
Kindergarten Teaching	2	10
Primary Teaching	2	8
Physical Culture	2	18
Chorus	1	18
Electives	5	18

GRADUATE COURSES

FOR students who have completed the regular two years' course, or who have had equivalent training elsewhere, and who wish to prepare themselves for primary work in Normal Schools, or as supervisors of primary schools or kindergartens, the following advanced course of one year is offered.

Elementary Education

Through assigned readings, lectures, and discussions, a study is made of the legitimate scope, purposes, characteristics, and methods of elementary education, with special emphasis on the work of the primary school.

This study involves a consideration of the following topics:

Essential characteristics of the product of the elementary schools.

The raw material,—the child to be educated.

The lines and order of development and growth in the process of education.

The materials and forces which may be properly utilized as educational means.

Methods of utilizing the appropriate materials and forces.

Instruction and Supervision

The following topics will be considered in detail by means of lectures, assigned readings, quizzes, and illustrated exercises.

Conditions of Effective Supervision.

General Knowledge, (a) of the ends to be secured through the process of education; (b) of the materials and forces available in the educative process, and of their appropriate use under varying conditions.

Special Knowledge (the result of inspection), (a) of the status of the child being educated, at any given stage of progress; (b) of the materials and forces used by the teacher as educational means, and of the methods employed in such use.

Utilization of the General and Special Knowledge in the determination, (a) of the necessary changes in materials and forces by substitution of others for those employed, or by change in order of use; (b) of necessary modifications of method employed in use of materials and forces.

Tact and skill on the part of the supervisor in securing the necessary changes and modifications by the teacher.

Handwork in the Kindergarten and Primary Schools

The aim is to show the possibility of extending the scope and modifying the character of the handwork ordinarily employed in the kindergarten, and of making the primary handwork a systematic and rational development of that begun in the kindergarten.

Students will be given training, on the art side, in the use of the pencil, brush, and crayon in illustrative work; and on the construction side, in the use of the different materials properly employed in handwork in the kindergarten and primary school.

OUTLINES OF KINDERGARTEN COURSES

THE following courses are given in the Stout Training School for Kindergarten Teachers:

Psychology. See Psychology in Manual Training course. Special attention is given to the psychology of child life.

Kindergarten Theory. Modern educational theories are studied for the special purpose of securing a proper basis for correct educational practice in the kindergarten and the elementary schools.

Kindergarten Technics. A study of the educational value and uses of materials suited to the needs of children in the kindergarten and primary grades; training in the manipulation of the various materials considered; methods of presentation in use of materials in class work. This involves a consideration of the traditional "gifts" and occupations,' the educational purposes they are designed to serve and methods of use; also a consideration of other materials and forms of material, which may be used with profit in place of some of the gift and occupation work prescribed by Froebel or supplementary to portions of that work; methods of use; the place of work with the various materials employed, in the kindergarten and primary program.

Child Study. A survey of the results of the work of recent investigators in the field of child study; methods of child study; scope and method of child study for the student in the training school for the kindergarten and primary teacher.

History of Education. This work is limited to a brief consideration of those educational movements which affect modern elementary education, and the influence of which can be made apparent to students.

Kindergarten Principles. A consideration of educational principles specially applicable to the kindergarten and primary school stage of development; their importance in determining the character, amount, and order of work to be given pupils during these stages of development.

Pedagogics of Primary Work. This work is based upon the psychology previously studied. The course first deals with the general principles of teaching followed alike in the kindergarten and primary school, with illustrations of their application in the latter. The teaching of the special subjects is then taken up, emphasis being placed in each subject upon those particular phases and topics which are of fundamental importance, or which are found, commonly, to be most poorly taught. The following subjects receive attention: reading, language, history and story, picture study, nature study and elementary geography, arithmetic, spelling, and penmanship. Practice teaching in the primary grades of the city schools is an important part of this course.

Nature Study. This course aims to broaden the student's knowledge of nature as well as to furnish material to be used later in practice. The study draws from all the branches of natural science for its material. Under the physical sciences are discussed: matter, changes of state, composition of air, water, and soil, temperature, and explanations of the different weather conditions. This is followed by a discussion of the relation of inorganic substances to animal and plant life. Plants are then studied with reference to methods of growth and cultivation, and types of different families of plants are also considered. The structure and habits of some of the commoner animals are studied. Among those briefly considered are types of worms, crustaceans, insects, molluscs, fishes, birds, and mammals. The types of plant and animal families are studied largely in the field. Excursions take the place of part of the class work when practicable.

Music. The required work in music is: 1st year, note reading, sight singing, notation and theory; practice singing of kindergarten songs; and the proper treatment and training of the child voice. 2d year, Chorus practice, part singing, and voice training. (Seniors and Juniors.)

Expression. This work consists chiefly in drill exercises in reading selections of various types of composition in order to secure purity of tone and good expression. Practice is given in telling stories and in reciting selections from memory.

Physical Culture. The work in physical culture is two-fold in character. Regular work in the gymnasium and natatorium is given under a competent instructor. In addition to this work, students are given practice in the kindergarten games both for the physical exercise and training involved, and for the necessary skill in conducting the games with the children in the kindergarten.

Freehand Drawing. The course in drawing is planned to give such instruction in the fundamental principles of drawing, in color work, and in blackboard sketching as will meet the needs of teachers in illustration work in the kindergarten and primary school.

Mechanical Drawing. This course is given primarily for the purpose of developing the students' perceptive powers, training in habits of close, concentrated attention, and accuracy in work.

Composition. See work in "English" in Manual Training Course.

Observation of Kindergarten Work. See "Observation" in Manual Training Course.

Practice Teaching. See "Practice Teaching" in Manual Training Course. During the senior year students are given practice teaching in the kindergarten and primary grades. Three kindergartens are used as practice schools. In the Central School Kindergarten, the students take entire charge of the work each forenoon, under the general supervision of the director of the Kindergarten Training School. In each of the other kindergartens the work is in charge of a kindergarten director who has the immediate supervision of the practice teaching. During the year each student has experience in each of the three kindergartens, thus having an opportunity to come into contact with widely different types of children, and to work under different conditions, affording a varied experience. Each student is required to devote some time to teaching in primary grades. Those students who wish to make a specialty of primary work have the greater portion of their teaching in those grades.

The primary practice teaching is done in the city primary schools under the general direction of the primary supervisor, and under the immediate supervision of the grade teacher.

All students doing teaching are required to plan each lesson with care and to submit the plan to the proper person, director or supervisor, for criticism and final approval. The actual work of teaching is criticised at a subsequent hour by the supervisor in charge. Frequent meetings of practice teachers are held by the supervisor, to discuss typical errors and suggest plans for improvement.

The opportunities afforded for practice teaching are almost ideal in respect to variety of conditions existing in public school systems, thus giving the extended and varied experience needed for successful work at the outset of one's teaching career.

STUDENTS
1906-1907

GRADUATE STUDENTS

Binzel, Cora E. ..... Beaver Dam, Wisconsin
Christianson, Erica ..... Menomonie, Wisconsin
Dayton, Almeda ..... Minneapolis, Minnesota
Olson, Louis F. ..... Menomonie, Wisconsin

MANUAL TRAINING

Seniors

Beers, Valdamere ..... Honey Creek, Wis.
Best, Louis F. ..... Green Bay, Wis.
Fuller, Ira S. ..... Pepin, Wis.
Jacobson, Harry A. ..... Burlington, Wis.
Knowlton, Jay F. ..... Owen, Wis.
Raeth, Adolph ..... Milwaukee, Wis.
Smith, Theodore H. ..... Delavan, Wis.
Works, Clarasia M. ..... Augusta, Wis.

Juniors

Bailey, Paul E. ..... Menomonie, Wis.
Brockus, C. A. ..... Sharpsville, Ind.
Byrnes, Charles ..... Oconomowoc, Wis.
Chapel, F. W. ..... Flint, Mich.
Engeseth, Edw. J. ..... De Forest, Wis.
Jungck, Harry H. ..... Menomonie, Wis.
Haynes, Nellie W. ..... Lake Geneva, Wis.
McNeel, J. Raymond ..... Menomonie, Wis.
Newcomb, Max E. ..... Pepin, Wis.
Nott, Frank L. ..... Menomonie, Wis.
Osen, Arthur ..... Oconomowoc, Wis.
Spaulding, Benj. W. ..... Oconomowoc, Wis.
Steckel, Frank ..... Menomonie, Wis.
Steendahl, Sam'l F. ..... Menomonie, Wis.
Touton, Luis L. ..... Edgerton, Wis.
West, R. D. ..... Iron Mountain, Mich.
Van Dalsem, Newton ..... Menomonie, Wis.
Zittleman, Henry T. ..... Menomonie, Wis.

DOMESTIC SCIENCE

Seniors

Adams, Nellie Tucker ..... Sterling, Ill.
Ames, May S. ..... Minneapolis, Minn.
Blackburn, Ann ..... Madison, Wis.
Fulton, Elizabeth M. ..... Evansville, Wis.
Gagnon, Lynne ..... Marinette, Wis.
Gleeson, Lucy ..... Fond du Lac, Wis.
Ingalls, Marion ..... Menomonie, Wis.
Jahn, Augusta ..... Alma, Wis.
Lander, Florence ..... Beaver Dam, Wis.
McGillivray, Veda ... Black River Falls, Wis.
Miller, Letta M. ..... Oshkosh, Wis.
Pattison, Margaret ..... Durand, Wis.
Pugh, Elizabeth ..... Monroe, La.
Schedler, Martha ..... Oconto, Wis.
Snively, Letitia ..... Menomonie, Wis.
Spohr, Wilhelmina ..... Manhattan, Kas.
Sweet, Barbara ..... Fond du Lac, Wis.
Watts, Edith L. ..... Milwaukee, Wis.
Worden, Jean ..... Menasha, Wis.
Young, Carrie M. ..... Beaver Dam, Wis.

Juniors

Andresen, Adeline ..... Medford, Wis.
Bishoff, Kittie L. ..... Ashland, Wis.
Black, Lorraine ..... Green Bay, Wis.
Blaisdell, Eula ..... Darlington, Wis.
Carlsted, Ester ..... Ashland, Wis.
Dodson, Elizabeth ..... Berlin, Wis.
Fenton, Theo. ..... Madison, Wis.
Gorton, Irma S. ..... Arcadia, Wis.
Graham, Elizabeth ..... Eau Claire, Wis.
Hussey, Anna ..... Annaheim, Cal.
Knothe, Amelia R. ..... Alma, Wis.
Kramer, Anna ..... Menomonie, Wis.
Marsh, Clarabelle ..... Neillsville, Wis.
Mayer, Pearle ..... Hudson, Wis.
McMillan, Anna ..... Grand Rapids, Wis.
Miles, Mary ..... Arkansaw, Wis.
Moore, Florence ..... Wauwatosa, Wis.
Moran, Katherine ..... Menomonie, Wis.
Moran, Josephine ..... Menomonie, Wis.
Morterud, Caroline ..... Westby, Wis.
Perkins, Elizabeth ..... Burlington, Wis.
Royce, Lillian ..... Fort Atkinson, Wis.
Scriver, Mabel ..... Merrill, Wis.
Strong, Ethel ..... Lake Mills, Wis.
Wasch, Tillie ..... Onalaska, Wis.

KINDERGARTEN

Seniors

Brown, Bessie R.....Ashland, Wis.
Brown, Lillian L.....Ashland, Wis.
Drowatzky, Bertha.....Tomah, Wis.
Dumville, Ida.....Marinette, Wis.
Hanton, Leone.....Superior, Wis.
McCutcheon, Susan.....Thorp, Wis.
Murphy, Minnie E.....Trempeleau, Wis.
Scribner, Fannie D.....Duluth, Minn.
Sjolander, Mabel L.....Onalaska, Wis.
Strand, Emma.....Menomonie, Wis.
Sutherland, Hallie B.....Superior, Wis.
Thomas, Myrta.....Eau Claire, Wis.
Vernon, Jennie E.....Madison, Wis.
Willson, Martha L.....Edgerton, Wis.
Wilcox, Mary E.....Eau Claire, Wis.

Juniors

Bailey, Marjorie.....Glen Ellyn, Ill.
Bartlett, Maud.....Eau Claire, Wis.
Campbell, H. Beryl.....Rice Lake, Wis.
Clark, Helen C.....Hudson, Wis.
Fenton, Gwendolyn.....Washburn, Wis.
Guter, Katherine.....Morris, Minn.
Hamar, Edna.....Marinette, Wis.
Hurlburt, Cora.....Durand, Wis.
Jahn, Clara A.....Alma, Wis.
Kyle, Jennie B.....Menomonie, Wis.
Mayers, Mayme R.....Menomonie, Wis.
McGilvra, Esther.....Menomonie, Wis.
Neuman, Pearl.....Elroy, Wis.
Pinkerton, Mary.....Prairie du Chien, Wis.
Quinlan, Helen.....Marinette, Wis.
Schweppe, Emma A.....Medford, Wis.
Sullivan, Catherine.....New London, Wis.
Tilleson, Alice.....Menomonie, Wis.
Volkman, Bertha.....Eau Claire, Wis.
Young, Margaret A.....Wausau, Wis.

MANUAL TRAINING COURSES IN THE MENOMONIE PUBLIC SCHOOL 1907-1908

General Purposes

THE general purpose is to give the pupil a broad experience in using a number of materials and tools which not only affords a variety of mental activity and discipline, but which give a large opportunity for self-expression and progressive individual growth.

Through a study of the processes underlying several fields of manual occupation, an acquaintance is given with some of the conditions necessary to success for those who may be attracted towards those lines of work upon leaving school. Kinds of exercises are chosen which will open up typical phases of work in wood and metals, paper, textiles, and clay.

The general arrangement of exercises is such as will be conducive to the best physical development. Large freehand movements, with little requirement for delicate adjustment of the muscles of the fingers, are presented in the first years of the course, but these movements lead directly to more careful manipulation, and to a higher degree of accuracy in work done in later grades. The last work is such as to require considerable skill on the part of the pupil, and a general ability to express himself well through handwork.

The work is planned so that each exercise supplies the training necessary to properly begin the next exercise, and so that each problem requires the best concentration of effort the pupil is able to give. A familiarity with the principles of construction is acquired, and an effort is made to develop in each pupil an ability to design and to appreciate good design.

A course in constructive drawing is carried on in connection with all the tool work. Originality is encouraged in so far as it remains within the bounds of appropriate form, and the pupil's capability, as developed by preceding exercises.

The work of the Manual Training course is closely related to that of the Art Department throughout. The underlying idea in the course is to present a certain amount of prescribed work, involving such fundamental

and related operations as seem necessary for the best development. Accompanying the prescribed work, opportunity and encouragement are given to each individual to show his originality and to exercise his inventive powers, either in making a variation of the models, or in the form of free work.

The following course represents the work in Manual Training in its present stage of evolution in the Menomonie Schools.

First Grade

The handwork in the first year furnishes a variety of easy manipulations of paper and cardboard, clay, and weaving materials, including: design, and freehand drawing; folding, cutting, and fastening cardboard to form constructions which shall apply number concepts, illustrate methods of cardboard construction, and train the fingers for later work; application of concepts of type forms to small objects modeled in clay; weaving of simple patterns on a small loom.

Ten thirty-minute periods weekly.

Second Grade

Paper and cardboard, clay, and weaving are continued from the first grade, adding geometrical and symmetrical paper cutting; heavier and larger cardboard constructions, incized and relief decoration applied to clay tiles and panels; small rug weaving; the making of coiled mats and baskets.

Ten thirty-minute periods weekly.

Third Grade

The use of a six-inch forty-five degree triangle, skew knife and desk board for work with binders board and straw board; pottery making by coiling and by using small lumps of clay, decorating by cutting the surface with a stick, coloring, and firing; a study of weaving with hand loom, shuttle, and heddle, and with modification of Indian loom; are added to the work of the second grade.

Ten thirty-minute periods weekly.

Fourth Grade

The use of heavy juts and pulp boards and the addition of a six-inch thirty-six-degree triangle enlarges the scope of paper and cardboard work in the fourth grade along the line of more solid constructions and cloth covered book covers. Book repairing adapted to the pupils' capacity occupies the latter part of the year and includes replacing loose leaves, repairing torn leaves and frayed corners, gluing supers, sewing and gluing loose

sections. Pottery forms are built up, decorated with clay slip and with low relief designs, glazed, and fired. Looms and textiles are studied with the conditions necessary to modern machine weaving. The course in woodwork begins with the construction of models embodying certain fundamental principles presented in the forms of sequenced exercises, each one growing naturally out of one or more preceding exercises. The sloyd idea is emphasized during a part of the course. The elementary woodwork which is carried on through the last half of the fourth and first half of the fifth grade is so arranged that the tools required are few and simple: the pencil, try square, bench hook, sloyd knife, back saw, coping saw, hammers, smoothing plane, brace and bit, file, skew carving knife, and background punch. The models are made from eighth, quarter, or half inch basswood and pine, prepared in most cases to thickness before being given to the pupil. Besides the regular models pupils make simple constructions derived from their play life in its imitation of adult activity. Some of these are wagons, wheelbarrow, tank and bird house.

Three forty-minute periods weekly.

Fifth Grade

The woodwork of the fifth grade is a continuation of the fourth grade course, with the attention directed toward problems which require a consideration of the third dimension. The adjustment and use of the plane is explained and the method of squaring up stock" is shown. The marking gauge and chisel are added to the equipment and a beginning made in their use. Bent iron work is added for the sake of decorative and constructive values not brought out in any of the other materials. The child is made acquainted with the properties and typical uses of iron as a structural material and operations are taken which bring in a new muscular adjustment for the fingers.

Two sixty-minute periods weekly.

Sixth Grade

In this grade the full course in bench work in wood begins. The rules for surfacing and squaring a piece of stock, names of common tools, and manner of using them are taught along with such fundamental processes as will apply in later work.

Two sixty-minute periods weekly.

Seventh Grade

In this grade there is required a more thorough study and application of principles gained in preceding woodwork, more skill and greater appreciation of a high standard of work. Special attention is given to the proper care of tools in regard to fine adjustments and keeping a working edge.

Two twenty-minute periods weekly.

Eighth Grade

For the first half year the models in woodwork are planned to continue the sequence of previous years with added difficulty. For the second half year larger original work is done. Mechanical drawing begins in the eighth grade and extends through the high school. The drawings consist of measuring and lining exercises, working drawings, and sheets of lettering.

Two eighty-minute periods weekly.

First Year High School

The purpose of the woodwork in the first year high school is to instill a knowledge of the principles of joinery by teaching the use and care of woodworking tools. To develop skill in their use by means of progressive exercises involving the different tools and a series of the different joints used in joinery. The application of the joints are shown in the construction of finished products. The mechanical drawing of this year is largely practice work in inking, with work in projection, and application of this in the making of working drawings of shop models.

Five ninety-minute periods weekly.

Second Year High School

Wood turning is given during the first eight weeks of the second year to familiarize the pupil with wood turning tools and lathe operations, the requisite skill being acquired by means of exercises embodying the various methods. The course is supplemental to that of joinery, the whole forming a foundation for the succeeding work in pattern making. Pupils are given practical acquaintance with typical shop processes employed in pattern making. This is accomplished by making a series of patterns from the simple solid pattern to the more complex parted and cored patterns, each exercise illustrating some new or special method practiced in molding. The molding work accompanies the pattern making to show the necessity for the application of different principles. Mechanical drawing during a part of the year is confined to shop drafting room practice with either patterns and parts of machines or architectural details, the rest of the time being given to work in projection, including perspective.

Five ninety-minute periods weekly.

Third Year High School

Forging is given during the third year by means of a progressive series of models illustrating fundamental principles of forging, each new model containing a new principle combined with some previously taught. The order of new exercises follows: drawing out to square, to round, and to

flat cross section, bending, tapering, twisting, fullering, upsetting, punching, finishing with the fuller swage and flatter, splitting, drilling, scarf welding, lap welding, screw cutting, practice in assembling parts, riveting, working steel in making lathe tools, tempering, grinding, and polishing. Mechanical drawing during this time may take the direction of architectural or machine drafting as a special preparation for occupations calling for this work.

Five eighty-minute periods weekly.

Fourth Year High School

Bench and machine tool work occupy the entire manual training time during the fourth year. Fundamental operations are taught through making practice pieces, the construction of which involves the typical use of one or more tools, the order in which these are given being determined by educational principles. The machine tools used are engine lathe, speed lathe, milling machine, drill press, sensitive drill, shaper, planer, and grinding machines. Some of the operations are: turning cylinder and taper, thread cutting, and tapping, cylindrical fitting, boring, reaming, gear cutting, planing, chipping and filing.

Five eighty-minute periods weekly.

Trade Classes

During the third and fourth years of the high school, in place of the regular work just indicated, students may elect either of the following two years of machine shop practice, to include a year making exercise pieces, and a year making complete machines or engines, or repairing and adjusting old machines, work to be of as practical a nature as possible; two years of cabinet making and carpentry, to include furniture and apparatus making and finishing, house framing and general building construction; two years of architectural or machine drafting practice, to include a review of the fundamentals of projection, a study of the elements of architectural and machine construction, working sketches and detail drawings, full working drawings, tracing and blueprinting, simple machine and architectural design, a discussion of the conditions, conventions, and conveniences of the modern drafting room and its relation to the work shop.

DOMESTIC SCIENCE COURSES IN THE MENOMONIE PUBLIC SCHOOLS 1907-1908

General Purposes

The purpose is two-fold. It has to do, first, with the development of the individual and, second, through this, with the development of the home.

The general purpose is to present such fundamental principles and their application in systematic exercises and operations as shall give to the pupil habits of attention and exactness, the power of logical thought, a high ideal of the dignity of labor, and the ability to use her powers definitely and intelligently in the production of her ideal of perfection. At the same time there shall come to her knowledge and experience that will be of direct use and effectiveness in her life and in her home.

To this end, the course includes a definite amount of study and systematic application that must precede the working out of individual ideas and inventions, though opportunity is given in the application of known principles and operations for originality and self-expression. Underlying the whole course, popularly called domestic science, which includes domestic art, domestic economy and domestic science proper, is the purpose to teach the pupil to think clearly, logically and purposefully about whatever the operation in hand may be, and to carry into her own home the classified knowledge, experience, and effectiveness resulting from the work in this course.

Fourth Grade

The course in sewing is introduced in the fourth grade and is largely model work, including practice stitches upon canvas, models of hems, bands and ruffles and the application of the principles of the models to the making of small articles of use, each pupil choosing her own application.

Fifth Grade

A brief study of plain weaving and the weaving of a small square from yarn precedes the model sewing in the fifth grade. The models consist of designs of darns and darns of various kinds upon stockinet and cloth. The application is made upon garments, stockings, and in ornamental darning upon articles made from crash, net, and heavy linen. The work of the preceding grade is continued in the making of small garments.

Sixth Grade

The sixth grade sewing is composed of a series of models showing the methods of patching, hemstitching, linen hemming, making of eyelets, scallops, fancy flannel stitches, seams, and buttonholes. The application is upon towels, table linen, and simple flannel and cotton garments.

Seventh Grade

The sewing of the seventh grade is an application of principles learned in the preceding grades. It consists of the drafting, cutting, fitting, trimming, and making of a set of underclothes. In addition to the regular work some time is devoted to designing and working out decorations in block-printing, stenciling, and darning for articles used in interior decoration.

Eighth Grade

Food study and cooking are introduced into the course of study in the eighth grade. The food study consists of a study of the uses of foods in the body, their sources, methods of manufacture, market appearance, and use as articles of food. The cooking is a study of the application of heat to common and simple foodstuffs and combination of food materials into plain foods.

First Year High School

The Food Study and Cooking of the first year of the high school is an elaboration of the work of the eighth grade, being a more detailed study of food materials and more advanced work in the preparation of foods and serving of meals.

Second Year High School

The course in Millinery in the second year of the high school is intended to develop taste in the selection and combination of materials and skill in their manufacture into hats. It includes the renovation of old as well as use of new materials.

Throughout the regular course of Sewing, attention is given to the application of fine needlework. In the Art Needlework course this application is made to such articles as hats, waists, toilet accessories, and articles of interior decoration, and includes embroideries, drawn work, faggoting, and fancy stitching.

Third Year High School

Dressmaking in the third year of the high school includes the study of various fibres, the study of the selection of materials, wearing qualities, costs, and the assembling into garments as well as the designing and making of the garments listed in the regular course.

Fourth Year High School

The Food Study and Cooking of the fourth year of the high school follows the science courses in Chemistry and Physiology and is largely a study of the conditions that govern and modify diet. The practical work is along the line of planning dietaries, planning menus, and cooking and serving meals.

The Household Management course is a practical course planned to show the relation of some of the common sciences and arts to the care of a house and to the various operations performed in it.

DRAWING AND COLOR WORK IN THE MENOMONIE PUBLIC SCHOOLS 1907-1908

THE work in drawing and color is begun in the first year and carried through the eight grades of the public school and two years of the high school. After completing the two years required in the high school, pupils of marked ability, who are desirous of doing so, are allowed to continue the work along special lines.

Freehand drawing from still life, life, nature, memory and imagination, is begun in first year and continued through the entire school course.

Design is begun in first year by making simple borders, surface patterns, etc., of colored sticks, paper tablets, natural leaves, flowers, etc., and is continued throughout the school course. The work is so arranged that the necessary qualities of good design, strength, simplicity, beauty and truth, and the underlying principles of the anatomy of pattern, order, proportion, repetition, radiation, symmetry, balance, etc., are of gradual and systematic growth.

The work in applied design includes general ornament, all kinds of surface patterns, borders, designs for tiles, pressed brick, metal work, hardwood floors, book-covers, prints, wall papers, rugs, oil cloth, stained glass, china, interior decoration, etc., and in the case of boys, designs for articles to be made and decorated in the manual training.

The work in design is supplemented by training in the principles of composition as applied in straight and curved line designs, landscapes, etc., through the entire course.

The historic styles of ornament are studied and the distinguishing features of each are applied in original designs. This work begins in the fourth year with the study of Egyptian art, and is followed by Greek and Roman in the fifth year, Byzantine in the sixth year, Saracenic in the seventh year, Gothic in the eighth year, Renaissance and modern art in high school.

Nature work begins in first year and forms a large and important part of each year's work, each season furnishing material for both drawing and color.

Flower Drawing begins in the first year and is carried on systematically from window gardens, wild flowers, etc. In the fourth year conventionalization is taken up, and later the use of conventional forms in original designs.

Freehand perspective is taught from the beginning of the work by a careful training in drawing the true appearance of simple models, and continues throughout the course. In the seventh and eighth years the laws of perspective, and the terms, are given—these being made as simple and as few as consistent with a clear understanding of the subject.

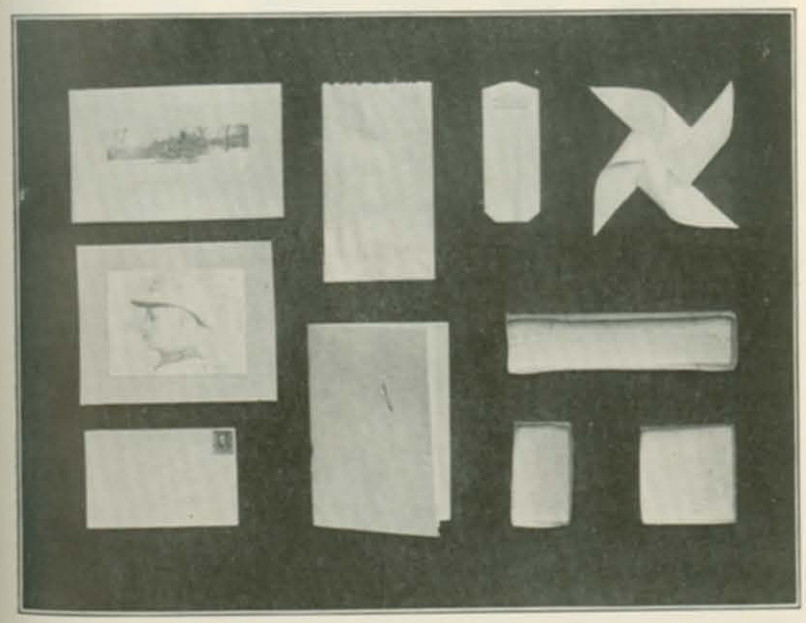
Cast Drawing from the antique is begun in the high school and continued through the course.

Charcoal, colored crayons, pencils and Japanese brushes are used in the first year and throughout the course. Water colors are used from third year on through course. Pen and ink work is introduced in fourth year. Designers' colors are used in high school for wall papers, etc.

COSTS OF MATERIALS FOR MANUAL TRAINING

CORRESPONDING with the models shown in the accompanying illustrations costs have been worked out for each grade of manual training in the Menomonie public schools. Minor costs such as for paste, short pieces of cord, glue, nails, and stain have not been considered, and no allowance has been made for waste which will run from a tenth to a half of total costs. In the sizes given allowance has been made for finishing stock to proper sizes which are in most cases furnished to the pupil by means of blueprints.

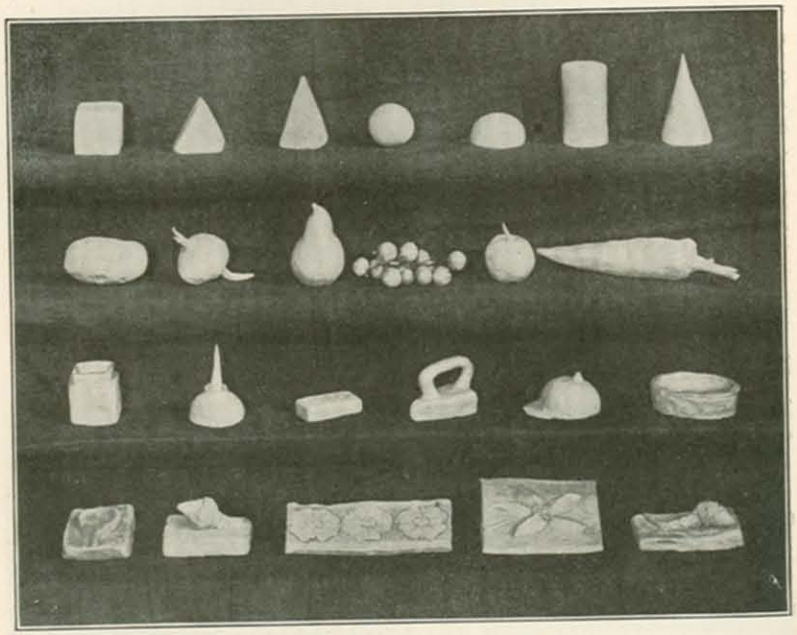
First Grade



Paper and Cardboard Construction

Paper and Cardboard

Models	Materials	Amounts	Costs
Picture mount	Queen cover paper	8"x8"	$.002
Paper sack	Manilla	8"x9"	.001
Book mark	Royal Melton cover	4½"x2"	.001
Pin wheel	White china paper	8"x8"	.001
Post card	Tag board	3½"x5½"	.001
	Royal Melton cover	6¼"x8¼"	.003
Book for drawing	White china paper	24"x8"	.004
Cardboard box	Bristol board	6"x8"	.003
			$.016

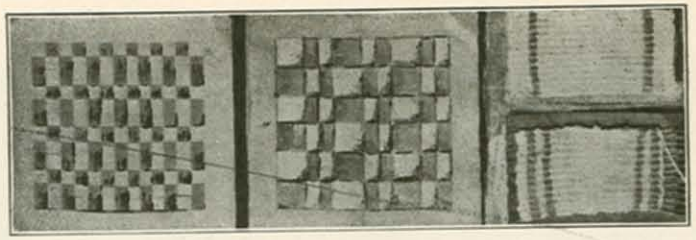


First Grade Clay Work

Six type forms	Modeling clay	12 oz.		$.012
Six applications to small objects	" "	12 oz.		.012
House forms or small objects	" "	8 oz.		.008
Relief ornament	" "	3 oz.		.003
				$.035

Weaving

Paper mats	Plain cover	32"x8"	$.003
	No. 8 knitting cotton	1-10 ball	.004
Dish cloth	Carpet warp		.001
			$.008



First Grade Weaving

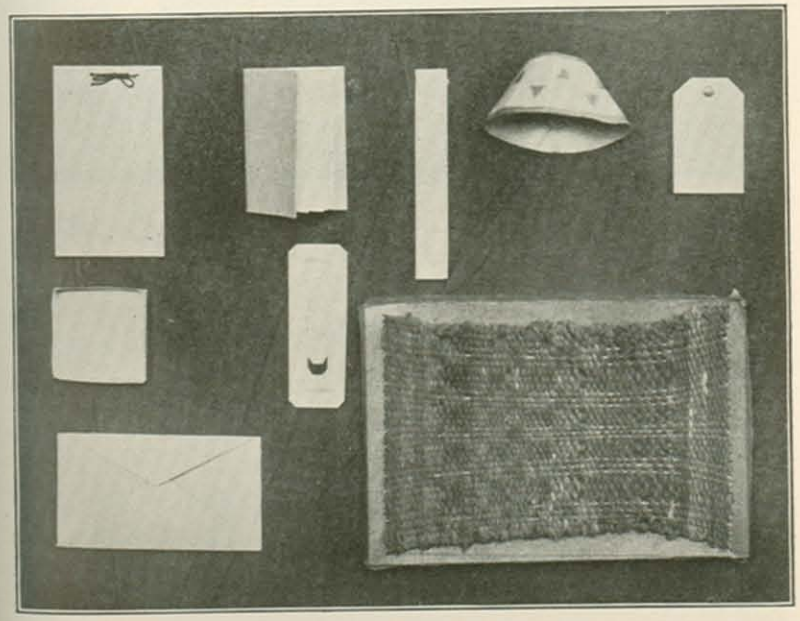
Calculations for paper work are on the basis of one manufacturer's particular styles. Other dealers can supply similar papers at corresponding prices. In addition to this construction work, a course is given in paper cutting and folding not shown in the illustration. This includes: free cutting from pose and to illustrate stories, songs, trades, and games, and folding and cutting of symmetrical forms. For this work each pupil uses about twenty-four eight-inch squares of paper, costing six mills.

The clay work is estimated at a cent and a half a pound for the dry clay. The total cost for clay may be reduced from half to three-quarters if pieces are reused.

Totals:

Paper folding and cutting, per pupil	$.006
Paper and cardboard construction, per pupil	.016
Clay work, per pupil	.035
Weaving, per pupil	.008
Total, per pupil	$ .065
" thirty pupils	1.95

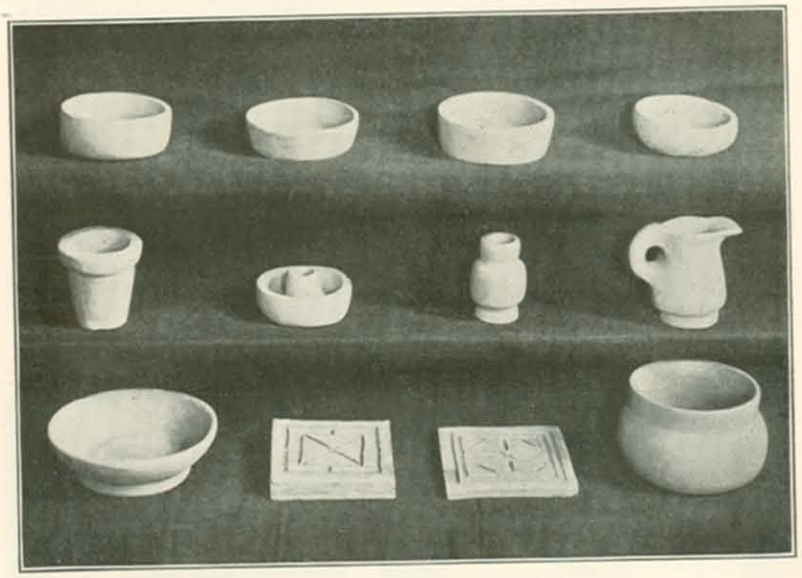
Second Grade



Paper and Cardboard Construction

Paper and Cardboard

Models	Materials	Amounts	Costs
Blotter	Bristol board	3¼"x5¾"	$.001
	Blotting paper	3½"x5¾"	.001
Receipt book	Queen cover	5½"x4½"	.002
	White China paper	5"x4"	.002
Circle maker	Tag board	½"x6"	
Lamp shade	Plain cover	9½"x4¾"	.002
Label	Tag board	2"x3½"	
Pin box	Queen	6"x6"	.002
Book mark	Royal Melton	4½"x2"	.001
Box loom	Marble board	8"x12"	.004
Envelope	White China	6"x13"	.001
			$0.16

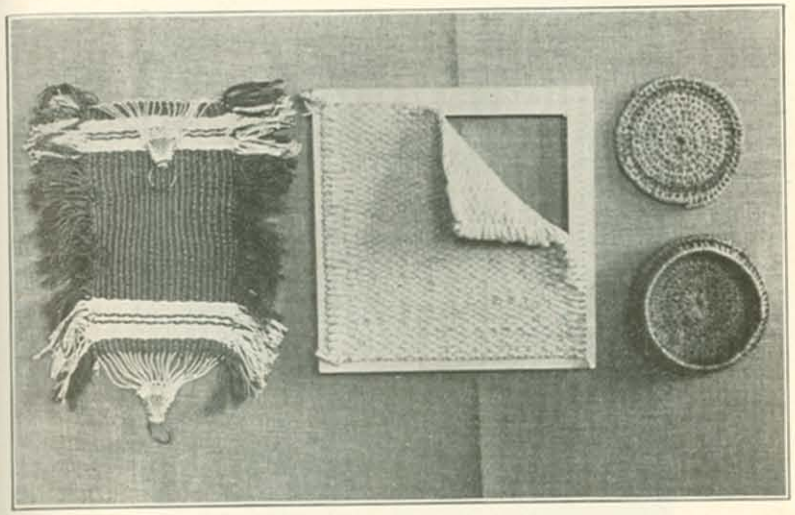


Second Grade Clay Work

Tile panel	Modeling clay	4 oz.		$.004
Bowl	" "	6 oz.		.006
Plate	" "	5 oz.		.005
Cup	" "	4 oz.		.004
Saucer	" "	4 oz.		.004
Candlestick	" "	5 oz.		.005
Decorated pottery	" "	6 oz.		.006
				$.034

Weaving and Basketry

Hammock	Mercerized cord	1-6 ball	$.017
Dishcloth	Miners wicking	3 oz.	.030
	Carpet warp		.001
Braided mat	Raffia	1-3 oz.	.004
Braided basket	Raffia	1 oz.	.010
			$.062



Second Grade Weaving and Basketry

Totals:

Paper folding and cutting, per pupil	$.006
Paper and cardboard construction, per pupil	.016
Clay work, per pupil	.034
Weaving and basketry, per pupil	.062
Total, per pupil	$ .118
" thirty pupils	3.54

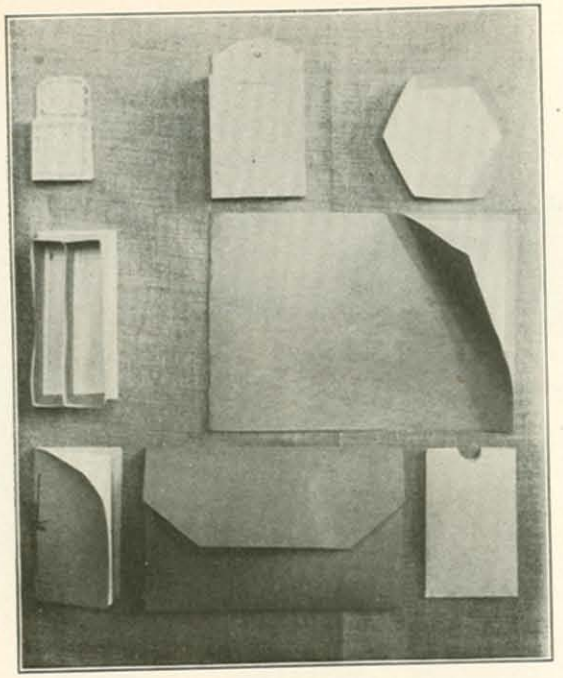
Third Grade

Paper and Cardboard

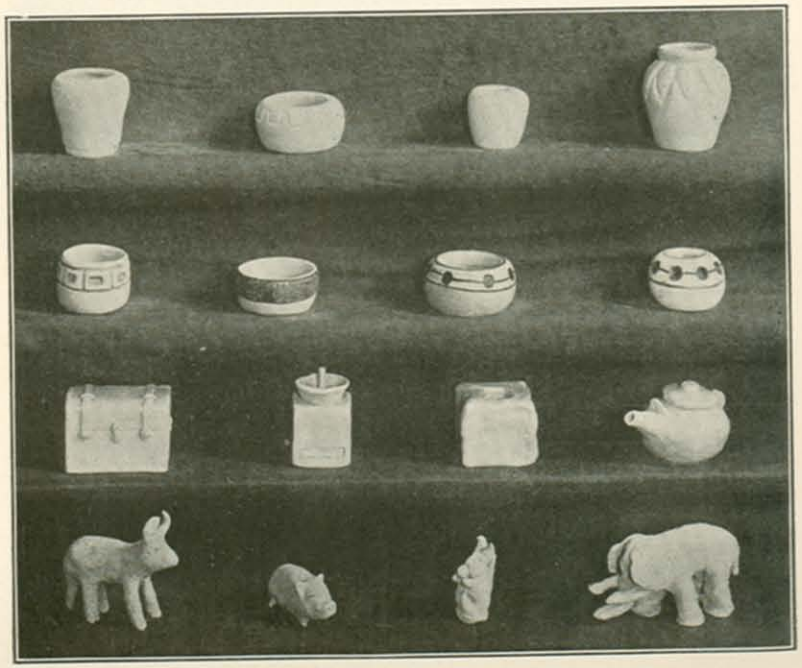
Models	Materials	Amounts	Costs
Match box	Tag board	4"x6"	$.001
Candy box	Royal Melton cover	6"x10"	.004
Post card box	Marble board	6"x11"	.003
Button box	Bristol board	6"x6"	.002
Filing case	Bristol board	4"x28"	.007
Scrap book	Queen cover	10"x25"	.004
	White China paper	9½"x24"	.005
	Royal Melton cover	5"x14"	.002
Note book	White China paper	4½"x6½"	.003
Portfolio	Queen cover	12"x12"	.002
Filing envelope	Tag board	4"x12"	.001
			$.034

Clay

Statues from poses and pictures	Modeling clay	8 oz.	$.008
Pottery	" "	8 oz.	.008
School buildings	" "	10 oz.	.01
Ornament	" "	4 oz.	.004
Decorated pottery	" "	8 oz.	.008
			$.038



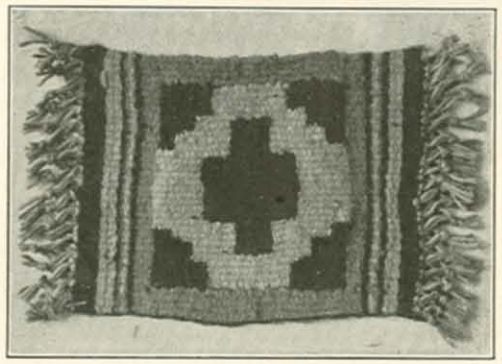
Third Grade Paper and Cardboard



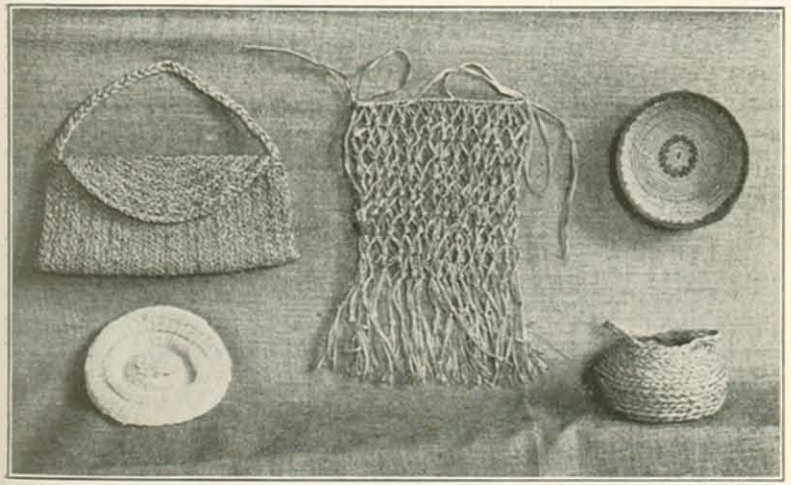
Third Grade Clay Work

Weaving and Basketry

Rug 9"x12"	Wool rovings	3½ oz.	$.10
	Carpet warp		
Handbag	Raffia	1 oz.	.01
Cap	Woolen yarn	1 oz.	.04
Knotted twine bag	Raffia	½ oz.	.005
Coiled basket	Raffia	¾ oz.	.008
	Twine		.001
			$.164



Third Grade Weaving



Third Grade Basketry

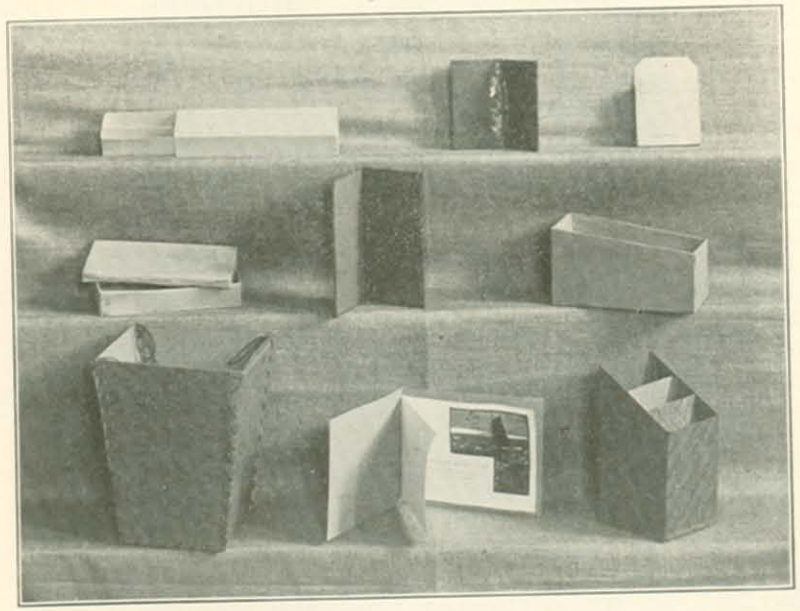
Totals:

Paper and cardboard construction, per pupil	$ .034
Clay work, per pupil	.038
Weaving and basketry, per pupil	.164
Total, per pupil	$ .236
" thirty pupils	7.08

Fourth Grade

Paper and Cardboard

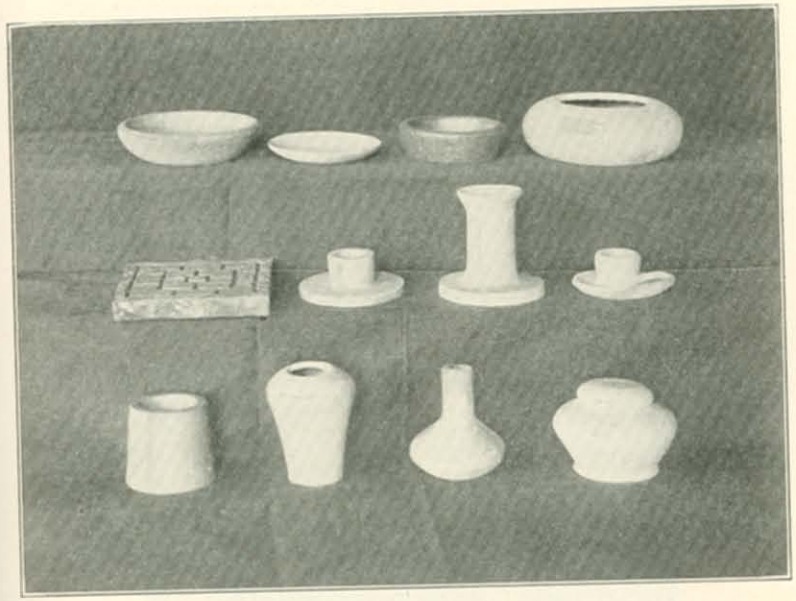
Models	Materials	Amounts	Costs
Pencil box	Tag board	10"x12"	$.004
	Marble board	6"x10"	.003
Fancy box	Queen cover	12"x20"	.004
Taper holder	Marble board	5"x10"	.003
Waste paper holder	" "	12"x27"	.010
Book binding	Binding board	6¾"x7½"	.002
	Gingham cloth		.002
Pocket paper file	Tag board	10"x7"	.002
Desk paper file	Strawboard	11¼"x13½"	.015
Book for illustrations	Royal Melton	8"x20"	.005
	White China paper	7½"x19½"	.003
			$.053



Fourth Grade Paper and Cardboard

Clay

Saucer	Modeling clay	4 oz.	$.004
Bowl	" "	8 oz.	.008
Tile	" "	4 oz.	.004
Candlestick	" "	5 oz.	.005
Vase	" "	8 oz.	.008
Jar with cover	" "	10 oz.	.010
			$.039

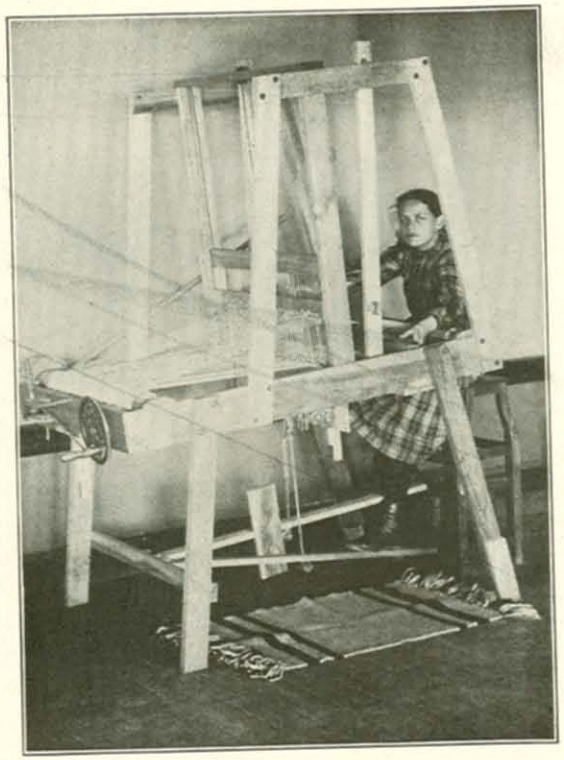


Fourth Grade Clay Work

Weaving and Basketry

Union rug	Wool rovings	28 oz.	$.880
(To be made by entire class.)	Carpet warp		.010
			$.890
Raffia wound basket	Rattan	1 oz.	$.04
	Raffia	1 oz.	.01
Rattan basket	Rattan	1 oz.	.04
			$.09

Fourth Grade Weaving and Basketry



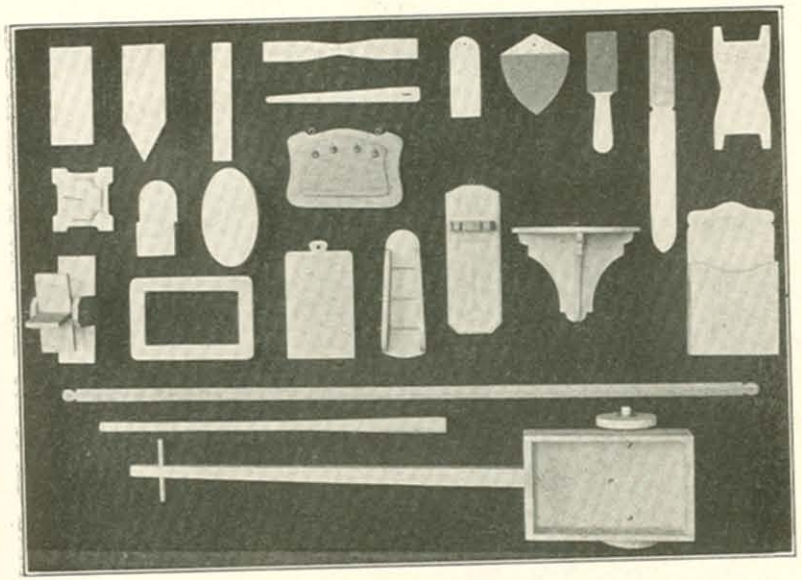
Loom for Weaving Large Rugs

Woodwork

Name plate	Basswood	⅛"x2¼"x5"	$.002
Boat	"	⅛"x2¼"x6"	.002
Ruler	"	3-16"x1"x6"	.001
Warp stretcher	"	¼"x1"x8"	.001
Weaving needle	"	3-16"x⅜"x8"	.001
Shipping tag	"	3-16"x1½"x4"	.001
Match scratcher	"	3-16"x3½"x4"	.002
Pencil sharpener	"	3-16"x1½"x6"	.002
Paper knife	"	¼"x1¼"x11"	.002
Fishline winder	"	3-16"x2¾"x6"	.002
Paper file	"	3-16"x3¾"x3¾" ⅛"x2¼"x2¼"	.002
			$.018

Totals:

Paper and cardboard construction, per pupil	$ .053
Clay work, per pupil	.039
Weaving, total $.89, per pupil	.037
Basketry, per pupil	.090
Woodwork, per pupil	.018
Total, per pupil	$ .237
" twenty-four pupils	5.680



Woodwork, Fourth and Fifth Grades

Fifth Grade

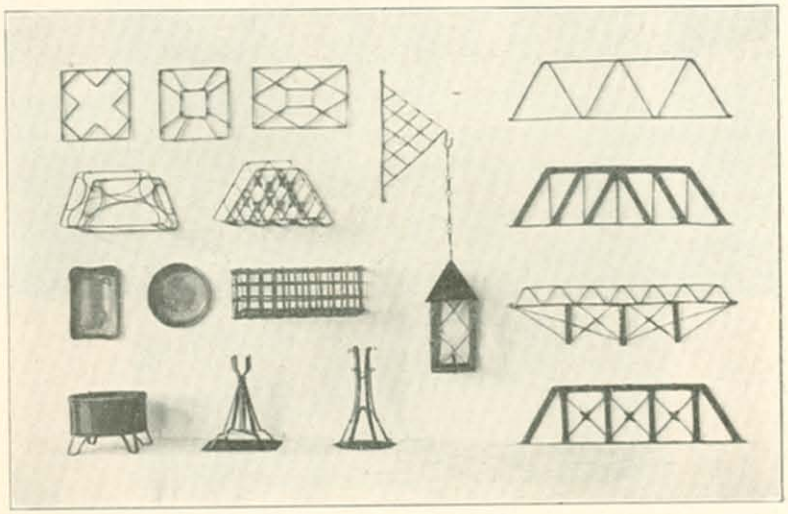
Woodwork

Models	Materials	Amounts	Costs
Match box	Basswood	6"x3"x3-16"	$.002
Worsted winder	Basswood	¼"x4"x12"	
		¾"x¾"x3"	.008
Key rack	Gum wood	¼"x4"x6"	
		⅛"x3"x4"	.015
Toothbrush holder	Basswood	¼"x2¾"x7½"	
		⅜"x2¼"x1½"	.010
Bracket shelf	Gum wood	3-16"x12½"x6½"	.018
Water wheel	Basswood	⅜"x8"x6"	.012
Post card box	Basswood	¼"x6½"x12"	.018
Picture frame	Basswood	3-16"x7"x12"	.017
Time recorder	Basswood	¼"x3½"x6"	.006
Cart	Basswood	⅞"x⅞"x34"	
		¼"x9"x8"	
		⅜"x5½"x9"	.040
Arrow	Pine	⅞"x⅞"x18"	.007
Bow	Ash	½"x¾"x36"	.010
			$.163

Bent Iron Work

Mat or tile	¼"	iron	39"	$.015
		binders	18	.018
Envelope holder	¼"	iron	94"	.035
		binders	18	.018
Tray	34 B. S. Taggers iron		3½"x5"	.006
Fern dish	¼"	iron	30"	.010
		binders	8	.008
		tin can		

Candlestick	¼"	iron	31"	.010
		binders	8	.008
Lantern	¼"	iron	144"	.050
		binders	28	.028
		Taggers iron	6"x12"	.028
Bracket and chain	¼"	iron	100"	.030
		binders	16	.016
Bridge	¼"	iron	120"	.040
		binders	30	.030
				$.350



Bent Iron and Sheet Metal Work

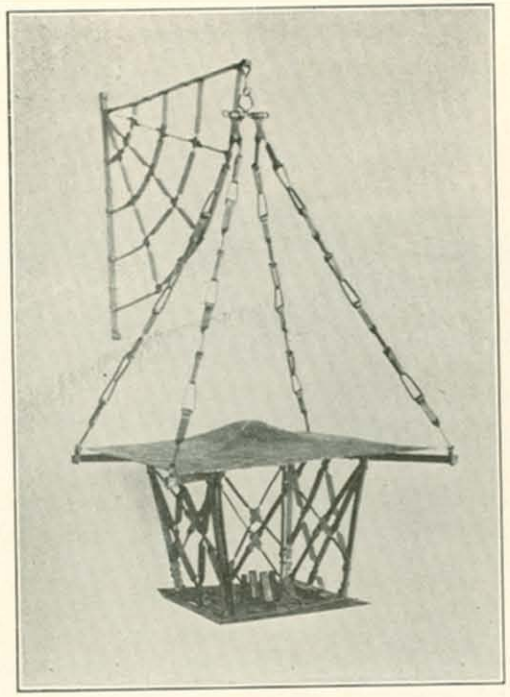
Totals:

Woodwork, per pupil	$ .163
Bent iron work, per pupil	.350
Total, per pupil	$ .513
" twenty-four pupils	12.312

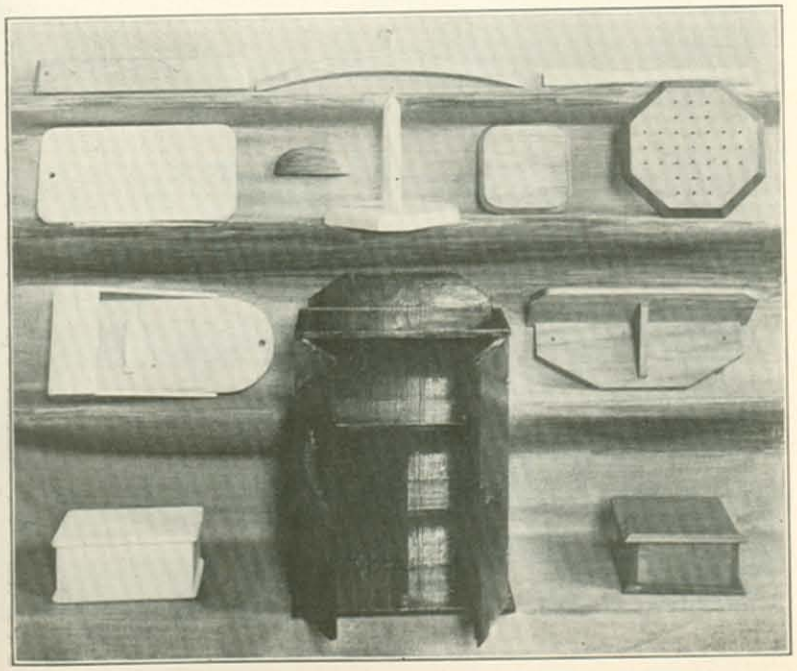
Sixth Grade

Woodwork

Models	Materials	Amounts	Costs
Bill file	Pine wood	⅞"x2½"x12½"	$.015
Bread board, Solitaire board or Ring toss	Basswood	⅞"x6"x11½"	.016
Coat hanger	Pine wood	⅞"x2½"x15½"	.018
Drawer pull	Gum wood	⅞"x1¾"x5"	.004
Teapot stand	Gum wood	½"x6"x6"	.015
Hammer handle	Maplewood	¾"x1¼"x12"	.005
Scouring tray or Bracket shelf	Pine wood	⅜"x7½"x24"	.040
Handkerchief box	Basswood	½"x9½"x13"	.038
Cabinet	Pine wood	½"x12"x54"	.260
			.411



Bent Iron Lantern



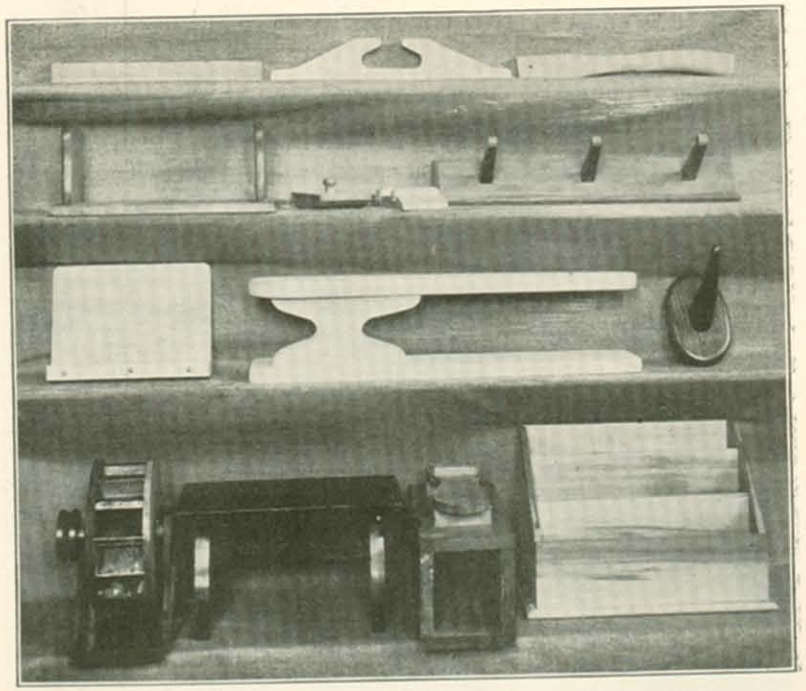
Sixth Grade Woodwork

Totals:
Woodwork, per pupil ..... $ .411
Woodwork, twenty-four pupils 9.864

Seventh Grade

Woodwork

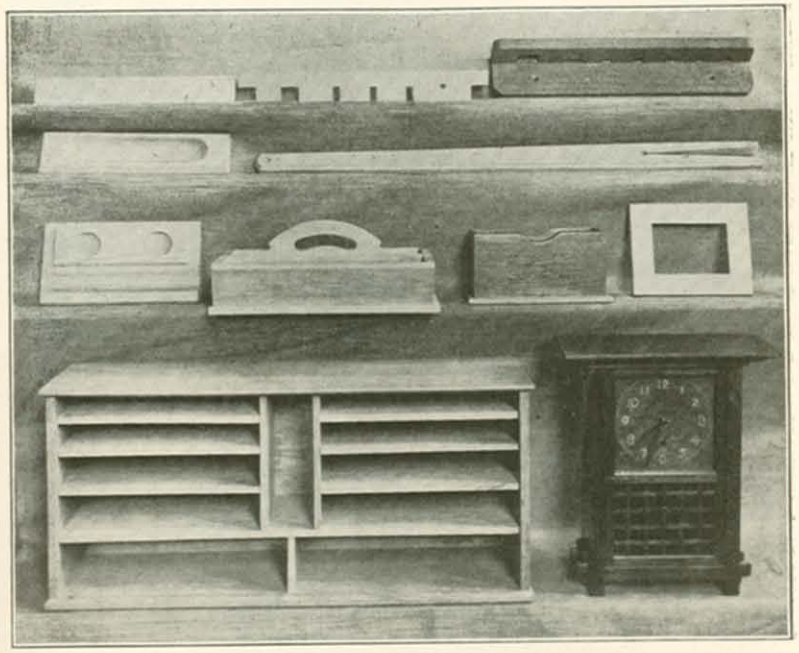
Models	Materials	Amounts	Costs
Straight edge	Pine	½"x1½"x12½"	$.004
Broom holder	Basswood	⅞"x3"x14½"	.010
Sandpaper block	Pine	⅞"x3¾"x5½"	.010
Blotter pad	Gum wood	1½"x4½"x5½"	.013
Footstool	Basswood	⅞"x8"x36½"	.079
Book rest	Pine	⅞"x11½"x10½"	.053
Blacking box	Pine	1¼"x2½"x3"	.210
	Hardware	½"x10½"x36"	.080
Book stall	Basswood	½"x11"x12"	.032
Towel hook	Oak	1½"x3"x6½"	
		1"x4"x6½"	.027
Hatchet handle	Maple	⅞"x2⅛"x13½"	.012
Hat rack	Ash	¾"x4"x18"	
		⅜"x9"x32"	.028
Filing cabinet	Gum wood	⅜"x7"x43"	.100
Sleeve board	Basswood	⅞"x5"x60"	.072
Water wheel	Pine	¾"x4"x8"	.181
	Taggers iron and washers		.019
			$.990



Seventh Grade Woodwork

Totals:
Woodwork, per pupil ..... $ .990
Woodwork, twenty-four pupils 23.76

Eighth Grade

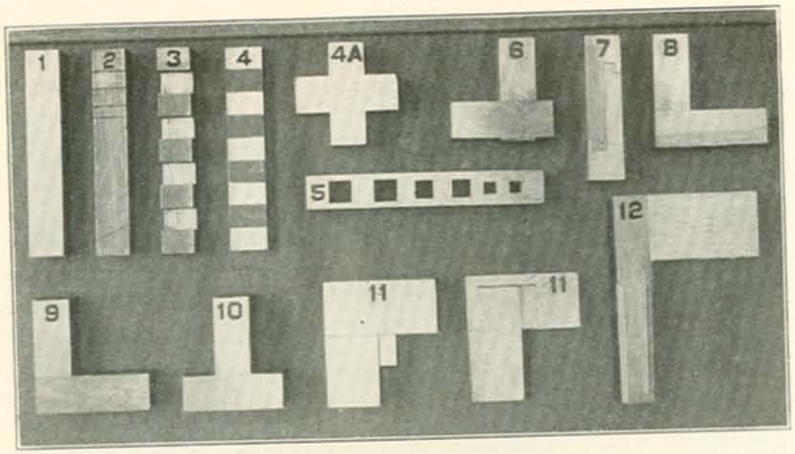


Eighth Grade Woodwork

Models	Materials	Amounts	Costs
Ruler	Gum wood	⅜"x2"x18"	$.005
Chisel rack	Pine	¾"x2½"x16"	.020
Tool holder	Pine	¾"x4"x16"	.030
Pen tray	Ash	⅞"x3"x11"	.015
Letter box	Gum wood	¼"x4"x29"	
		⅜"x4¼"x8½"	.025
Clothes stick	Pine	⅞"x2¼"x30"	.037
Knife and fork box	Pine	½"x8"x12"	
		½"x5¼"x30"	.090
Picture frame	Gum wood	½"x1⅜"x27"	
		⅛"x5"x6"	.017
Ink stand	Ash wood	⅝"x6"x9"	.035
			$.284

Desk cabinet, clock, small table, or chair ..... $.10 to $2.50

Totals:
Regular course in woodwork, per pupil ..... $ .284
Regular course in woodwork, twenty-four pupils 6.816
Extra problems, per pupil ..... $.10 to 2.50
Extra problems, twenty-four pupils ..... $2.40 to 60.00



Exercises in Joinery

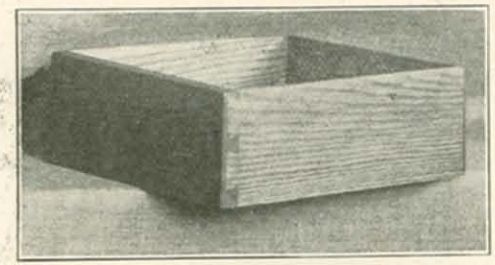
Models	Materials	Amounts	Costs
Planing exercise	Pine	1½"x1½"x9"	.018
Sawing exercise	"	1½"x1½"x9"	.018
Chiseling exercise	"	1½"x1½"x9"	.018
Inlaying exercise	"	¾"x1½"x15"	.012
Mortising exercise	"	1¾"x1¾"x9"	.018
Mortise and tenon joint	"	1⅝"x1⅝"x9"	.018
Splice joint	"	1⅝"x1⅝"x10"	.019
Open mortise and tenon	"	1⅝"x1⅝"x9½"	.018
Dove tail joint	"	1⅝"x1⅝"x9"	.018
D'ble mortise and tenon	"	1⅝"x2⅛"x10"	.024
Mortise-tenon with key	"	1⅝"x2⅜"x12½"	.025
Mortise-tenon with relish	"	1"x3"x4¾"	
	"	1⅝"x1⅝"x8"	.023
			$.229

Applications of Joints

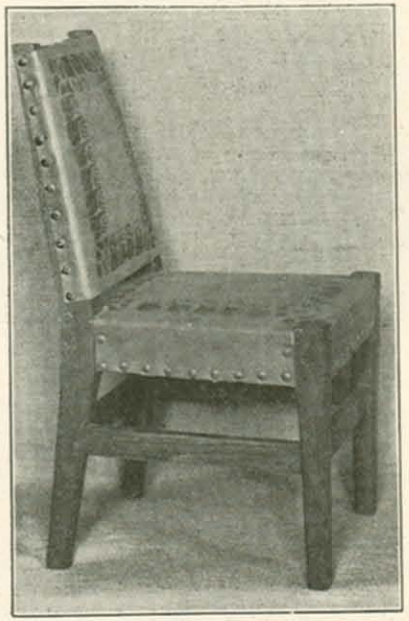
Filing drawer	Oak	⅜"x8"x26"	$.078
Child's chair	"	1"x3"x6' 5"	.119
(Upholstering material to be chosen by the pupil.)			
	"	1"x6"x10' 0"	
Screen	Pine	¾"x¾"x23' 0"	.358
Bridge	"	¾"x¾"x45' 0"	.233
	Bolts	3-16"x6"	.100
			$.888

Totals:

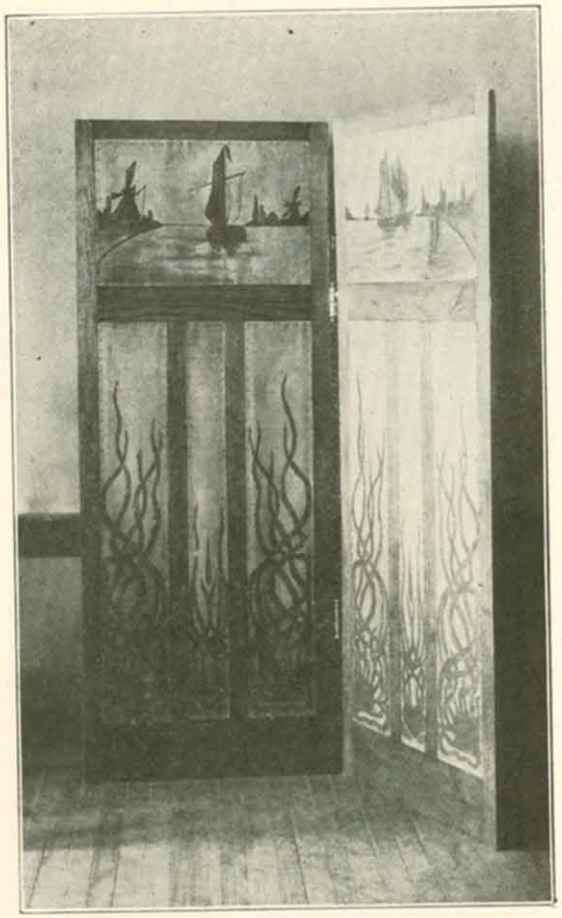
Exercise pieces, per pupil	$ .229
Applications of joints, per pupil	.888
Total, per pupil	$1.117
" twenty-four pupils	26.808



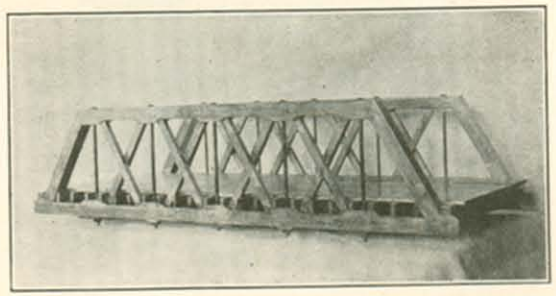
Filing Drawer



Child's Chair



Screen

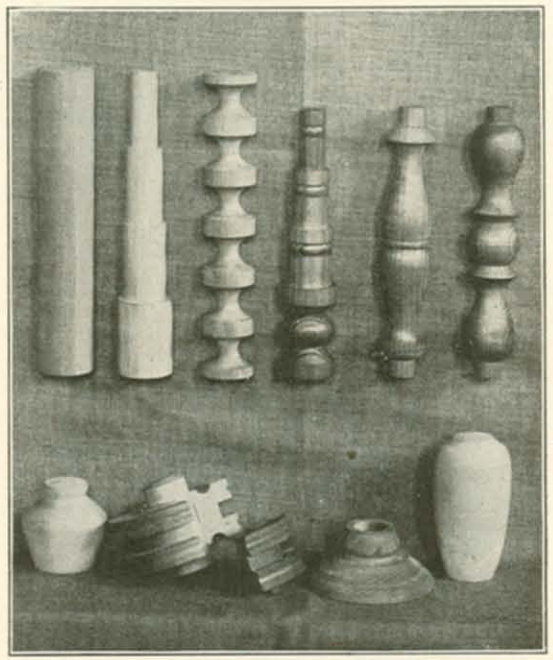


Howe Truss Bridge

Second Year High School

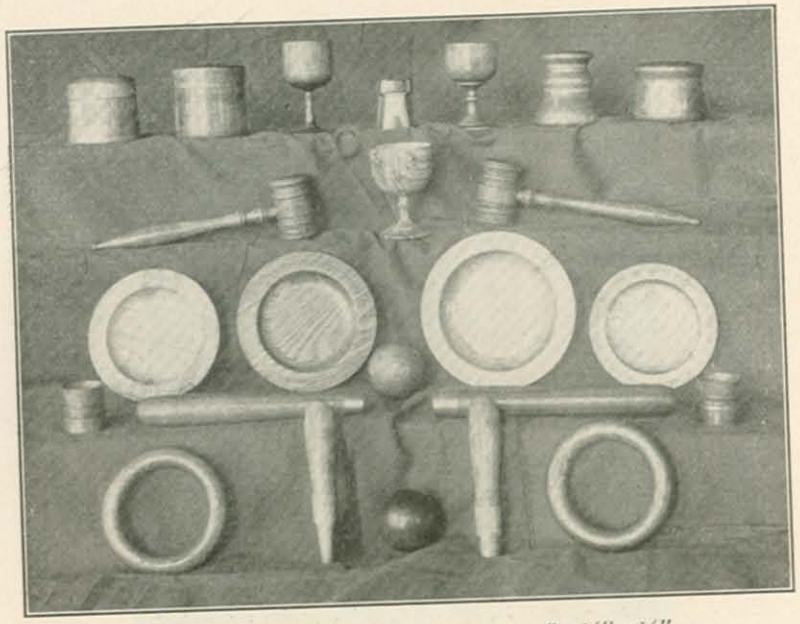
Wood Turning

Models	Materials	Amounts	Costs
Plain cylinder	Pine	2"x2"x9½"	$.018
Grooved cylinder	Pine	2"x2"x9½"	.018
Stepped cylinder	Pine	2"x2"x9½"	.018
Combination exercise	Pine	1¾"x1¾"x9"	.018
First spindle	Pine	1¾"x1¾"x9"	.018
Second spindle	Pine	1¾"x1¾"x9"	.018
First vase	Basswood	3"x3"x4½"	.010
Second vase	Basswood	3"x3"x6"	.013
Face plate exercise	Pine	2"x4"x4"	.016
Fitting exercise	Pine	2"x4"x5½"	
		1½"x5"x5"	.034
			$.181

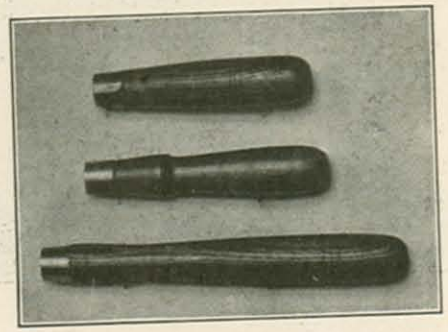


Exercises in Wood Turning

Chisel handle	Maple	1¼"x1¼"x5¼"	$.006
Turning tool handle	Maple	1⅜"x1¾"x9¾"	.010
Gavel	Maple	2¼"x2¼"x4"	
		1¼"x1¼"x10"	.023
Ball	Oak	3"x3"x4½"	
	Basswood	1½"x5"x5"	.037
Napkin ring	Birch	2"x2"x4"	.008
Plate	Birch	1"x5½"x5½"	.015



Towel ring	Oak	1"x5½"x5½"	
	Basswood	2"x6"x6"	.032
Goblet	Maple	3"x3"x6"	.022
Box	Oak	3½"x3½"x6"	.025
	Shellac for course		.020
	Oil for course		.010
	Cheese cloth for course		.010
			$.218



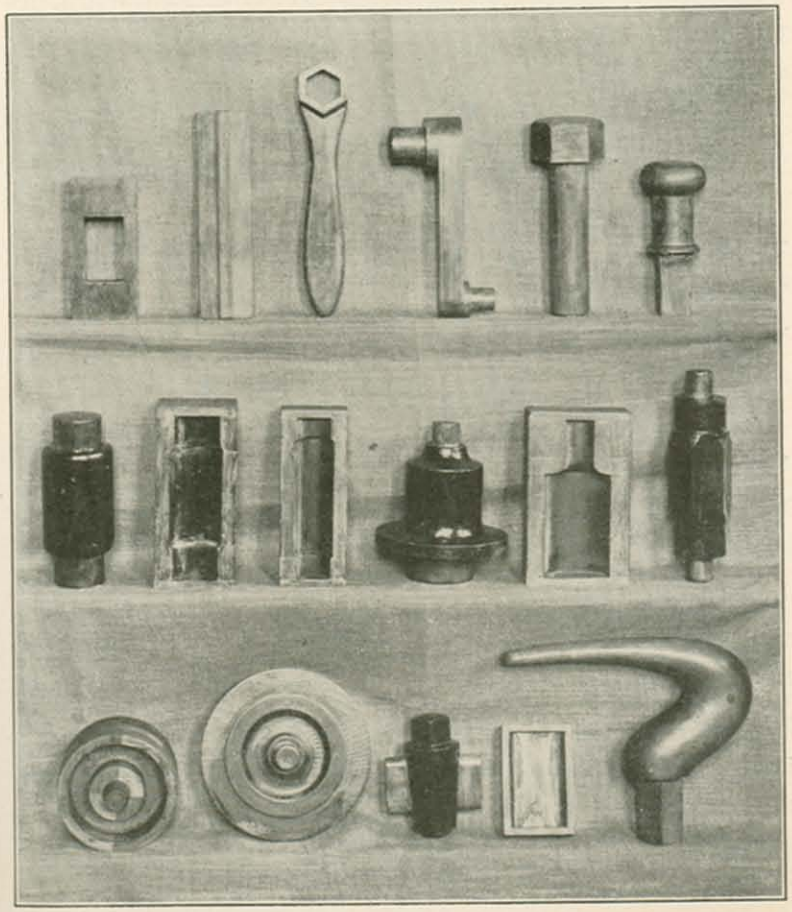
Pattern Making

Models	Material	Size	Cost
Shoe	Pine	2"x3"x7"	$.020
Ribbed pattern	Pine	1"x3"x9"	.013
Wrench	Pine	1"x3"x12"	.017
Crank	Pine	1"x3"x18"	.026
Bolt	Pine	2"x3"x14"	.041
Round stake	Pine	2"x3"x15"	.045
Pipe coupling	Pine	2"x3"x15"	.045

Core box	Pine	2"x4"x9"	.035
Flange	Pine	3"x6"x15"	.131
Core box	Pine	2"x5"x9"	.045
Rod coupling	Pine	3"x3"x9"	.040
Built up pulley	Pine	1"x3"x42"	.061
Grooved pulley	Pine	2"x7"x7"	.048
Valve stem	Pine	2"x3"x15"	.045
Core box	Pine	2"x3"x6"	.017
Irregular stake	Pine	2"x6"x20"	.117
			$.746

Totals:

Soft wood turning exercises, per pupil	$ .181
Hard wood applications of same, per pupil	.218
Pattern making, per pupil	.746
Total, per pupil	$1.145
" twenty-four pupils	27.580



Pattern Making

Third Year High School

Forging

Drawing exercise	Norway iron	⅝" round, 3¾"	5 oz.	$.013
	B. S. Coal		3 lb.	.009
Round stock ring	Norway iron	⅜" round, 7½"	5 oz.	.013
	B. S. Coal		3 lb.	.009
Square stock ring	Norway iron	¼"x¾", 10"	6 oz.	.015
	B. S. Coal		3 lb.	.009
Figure eight	Norway iron	⅜" round, 11"	6 oz.	.015
	B. S. Coal		3 lb.	.009
Gate hook	Norway iron	⅜" square, 8"	5 oz.	.013
	B. S. Coal		4 lb.	.012
Angle	Norway iron	¼"x1", 6"	7 oz.	.018
	B. S. Coal		4 lb.	.012
Bar for trace chain	Norway iron	½" round, 6¾"	6 oz.	.015
	B. S. Coal		4 lb.	.012
Fullering exercise	Norway iron	¾" round, 7"	11 oz.	.028
	B. S. Coal		4 lb.	.012
Fork	Norway iron	½"x1¼", 4"	8 oz.	.019
	B. S. Coal		5 lb.	.015
Splitting exercise	Norway iron	½"x1¼", 6"	12 oz.	.031
	B. S. Coal		5 lb.	.015
Wall hook	Norway iron	½"x1¼", 3"	7 oz.	.018
	B. S. Coal		5 lb.	.015
Chain, 4 links	Norway iron	⅜" round, 30"	1 lb.	.039
	B. S. Coal		6 lb.	.018
Flat ring	Norway iron	⅛"x1", 15"	1 lb.	.039
	B. S. Coal		4 lb.	.012
Staple and ring	Norway iron	⅝" round, 15"	2 lb.	.084
	B. S. Coal		6 lb.	.018
Bolt	Norway iron	½" round, 5"	6 oz.	.015
	B. S. Coal		4 lb.	.012
Chain and hook	Norway iron	⅜" round, 30"	2¼ lb.	.094
	B. S. Coal		6 lb.	.018
Tongs	Norway iron	1" square, 30"	3 lb.	.126
	B. S. Coal		6 lb.	.018
Machine shop tools (a)	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		5 lb.	.015
Machine shop tools (b)	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		5 lb.	.015
Diamond point tools	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		5 lb.	.015
Threading tool	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		4 lb.	.012
Cutting-off tool	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		4 lb.	.012
Boring tool	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		5 lb.	.015
Side tool	Silver tool steel	½"x1", 7"	1 lb.	.162
	B. S. Coal		5 lb.	.015
Fork	Machine steel	¼"x1", 4"	8 oz.	.027
	B. S. Coal		5 lb.	.015
Hardy	Tool steel	1½" square, 4"	1½ lb.	.300
	B. S. Coal		6 lb.	.018
Set hammer	Tool steel	1½" square, 5"	3 lb.	.600
	B. S. Coal		10 lb.	.030
				3.043

Totals:

Forging, per pupil	$3.043
Forging, thirty pupils	91.290

Fourth Year High School

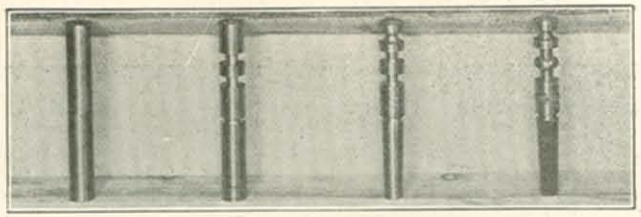
Machine Shop Practice

Taper turning	Cold rolled shafting	1.34 lbs.	$.10
Thread cutting	Mild machinery steel	1.34 lbs.	.07
Hex. bolt and nut	Drop forged steel	1.16 lbs.	.07
Eccentric	Cast iron	5.62 lbs.	.17
Fitting exercise	Cast iron	17.50 lbs.	.53
	Machinery steel	4.00 lbs.	.22
Jack screw	Cast iron	12.96 lbs.	.39
	Machinery steel	7.33 lbs.	.30
	Tool steel	1.87 lbs.	.16
Shaper exercise	Cast iron	4.94 lbs.	.15
Small gear	Cast iron	1.28 lbs.	.38
Large gear	Cast iron	4.44 lbs.	.13
Lathe center	Tool steel	1.78 lbs.	.20
			$2.87
Planer exercise	Cast iron	58.00 lbs.	1.80

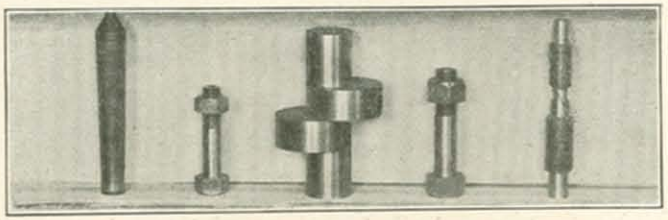
(To be made by entire class.)

Totals:

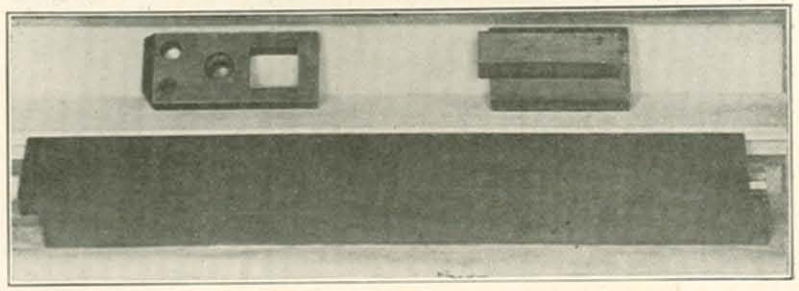
Regular course, per pupil	$2.87
Planer exercise, total $1.74, per pupil	.18
Total, per pupil	$3.05
" ten pupils	30.50



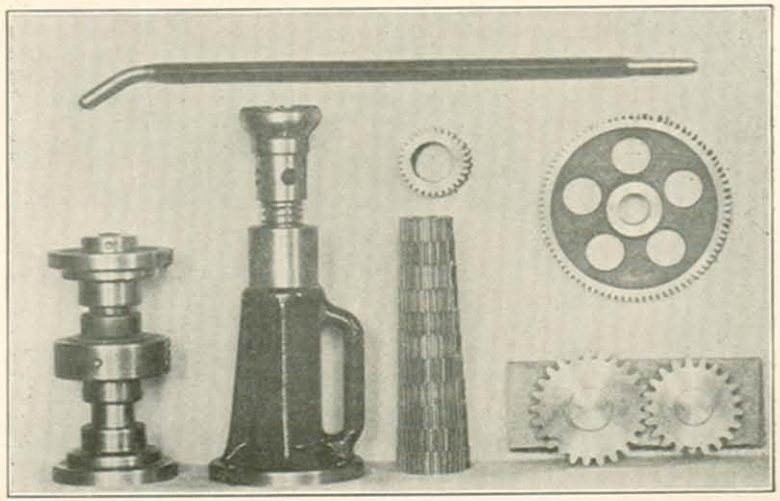
Taper Turning Exercises



Turning and Thread Cutting Exercises



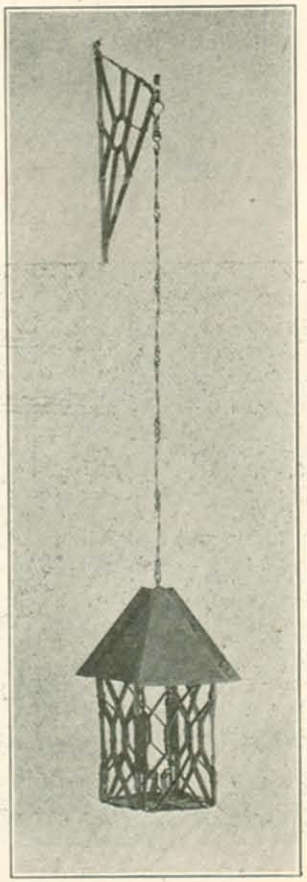
Shaper and Planer Exercises



Fitting Exercise, Jack Screw, and Gear Cutting

Summary of Costs

	Per Pupil	No. Pupils in Class	Per Class
First Grade	$ .065	30	$ 1.95
Second Grade	.118	30	3.54
Third Grade	.236	30	7.08
Fourth Grade	.237	24	5.68
Fifth Grade	.513	24	12.31
Sixth Grade	.411	24	9.86
Seventh Grade	.930	24	22.32
Eighth Grade	.284	24	6.82
First Year High School	1.117	24	26.81
Second Year High School	1.145	24	27.58
Third Year High School	3.043	20	91.29
Fourth Year High School	3.050	10	30.50
Totals	$11,209	288	$245.74

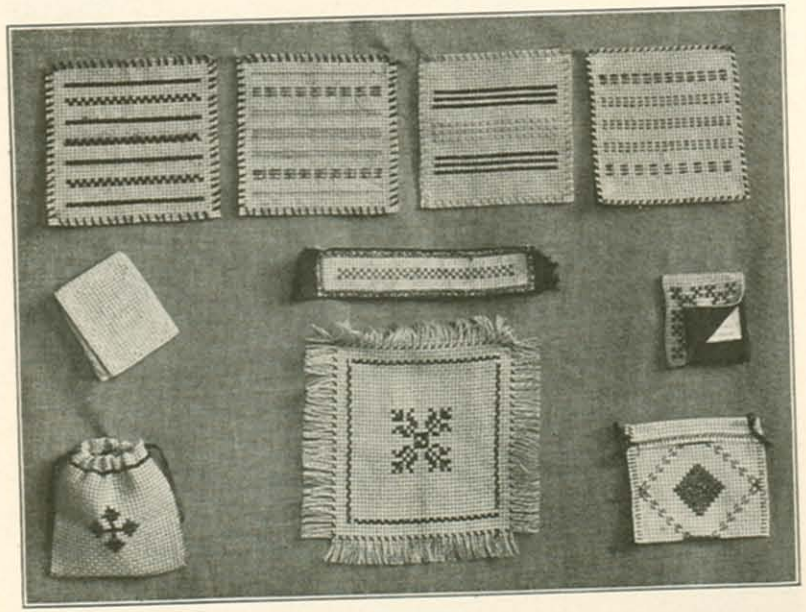


COSTS OF MATERIALS FOR DOMESTIC SCIENCE

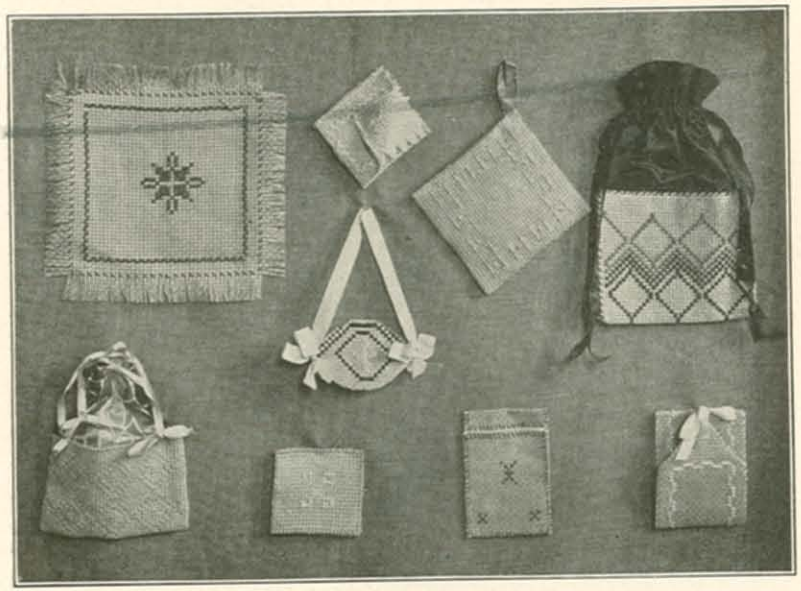
IN listing the costs of materials for the course in Domestic Art, the costs have been placed under two headings, cost to school and cost to pupil. This is necessary to give an idea of the variety of work that may be used at slight cost to the school. In nearly every case where it is advisable the pupils are anxious to supply their own materials that they may have the completed article.

Fourth Grade

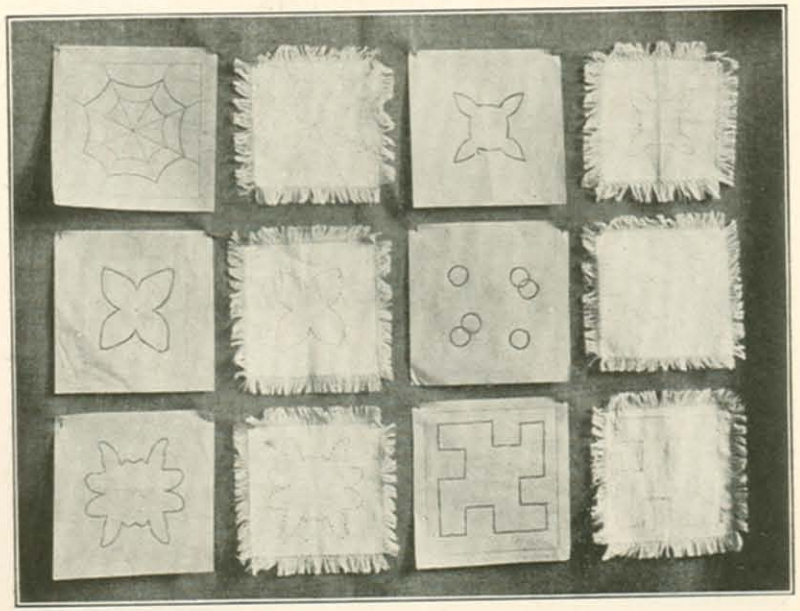
Sewing



Canvas Work



Fourth Grade Original Work



Fourth Grade Designs and Doileys

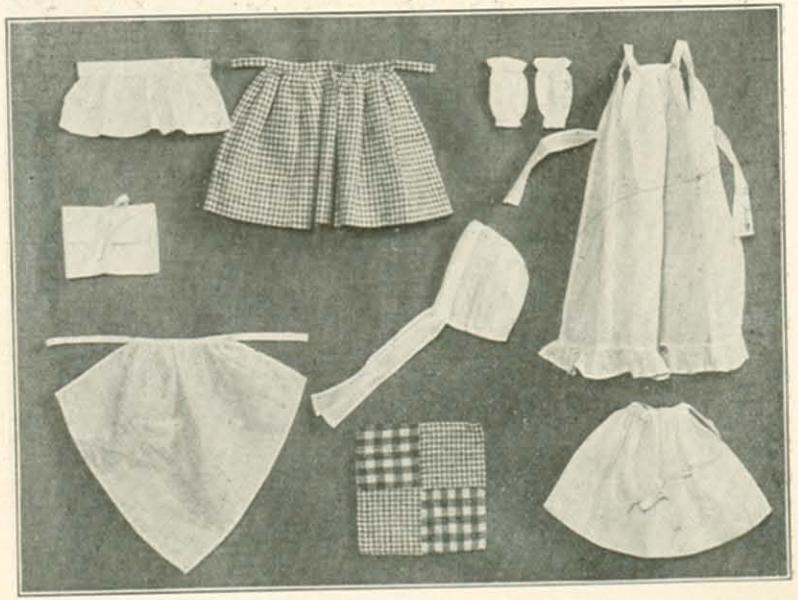
Fourth Grade

Sewing

Models and Articles of Use	Amounts	Costs
Simple stitches on canvas	6"x6" canvas	$.014
Complex stitches on canvas	6"x6" canvas	.014
Cross stitches on canvas	6"x6" canvas	.014
	¼ oz. zephyr	.015
Original piece (selected by pupil)	6"x12" canvas	.041
	1-10 spool sansilk	.005
		$.103
One inch hem in muslin	3"x4" muslin	
One-half inch hem in muslin	3"x4" "	
One-fourth inch hem in muslin	3"x4" "	.002
Square and mitred corners in muslin	6"x6" "	
Muslin doiley in running stitch	6"x6" "	.005
Small ruffle in band	3"x9" "	
	2"x6" "	.002
Small pillow case	9"x11" "	.008
Small apron	18"x6" gingham	.015
	Sewing cotton	.002
		$.034

Original piece material furnished by pupil. The last original piece of the fourth grade is a small child's apron, small quilt, or any piece that will furnish an application of the principles of the preceding models.

Cost to school of canvas work, per pupil	$ .103
" " " " cloth models, per pupil	.034
Total cost to school, per pupil	$ .137
" " " " " class of twenty-four	3.288

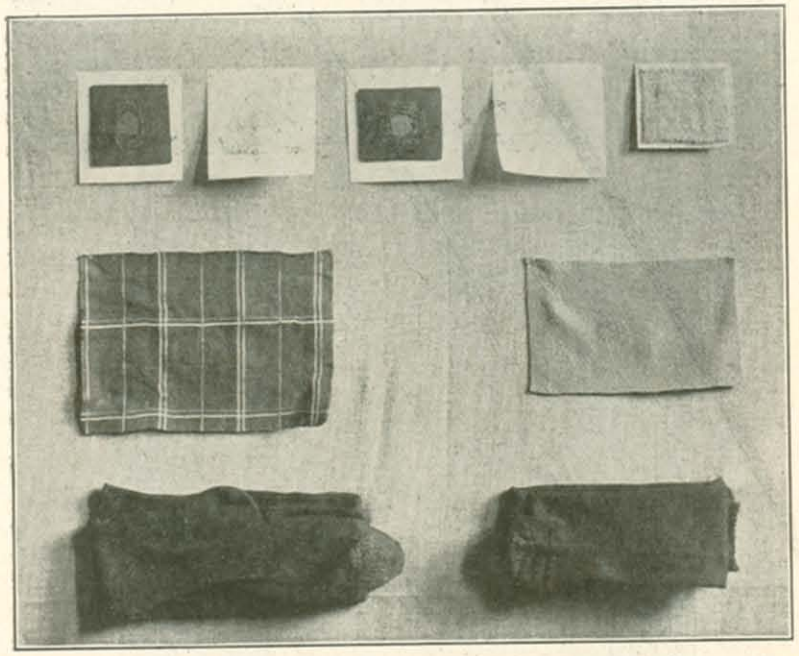


Original Work

Fifth Grade

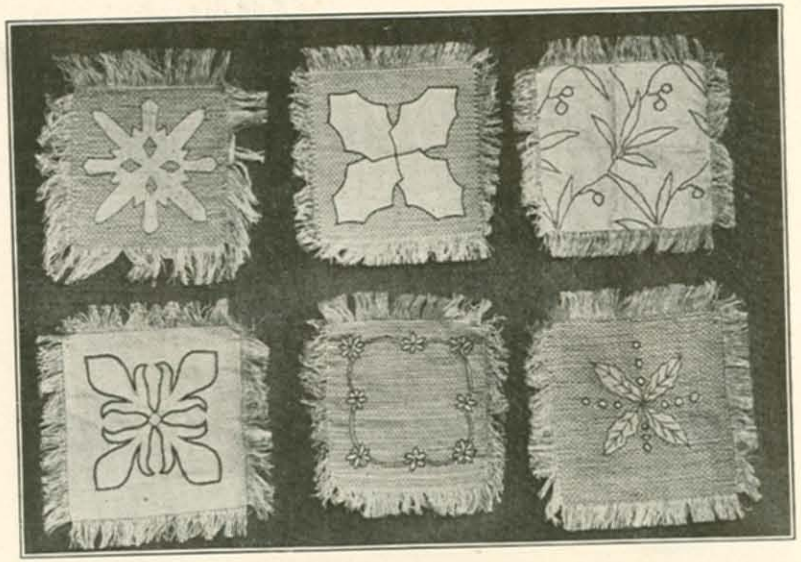
Sewing

Models and Articles of Use	Amounts	Costs
Design of plain weaving	4"x4" manilla paper	$
Yarn weaving	4"x4" bristol board	.005
	Yarn	.005
Design of square darn	4"x4" manilla paper	
Square darn on stockinet	4"x4" bristol board	.005
	Old stockinet	
Design of pointed darn	4"x4" manilla paper	.002
Pointed darn on stockinet	Old stockinet	
Darning on stockings (furnished by pupils)	Darning cotton	.002
		$.019



Fifth Grade Darning

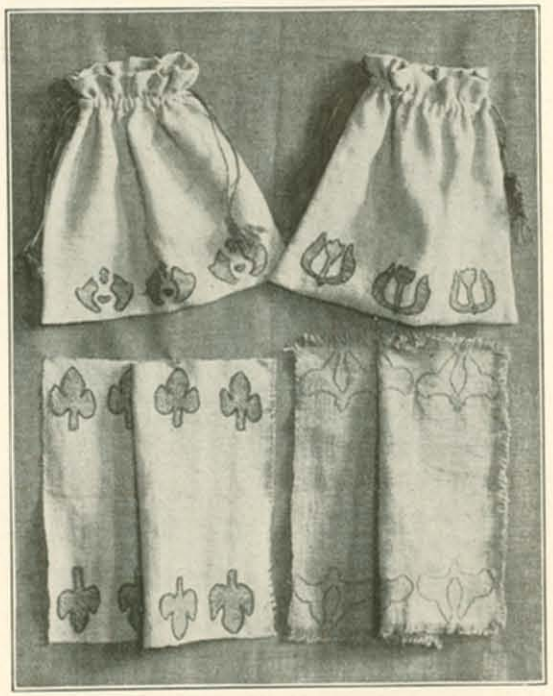
Design for doiley—ornamental darning	9"x9" manilla paper	$.003
Huckaback doiley	9"x9" huckaback	.012
	Sansilk	.004
		$.019
Darning on cloth with ravelings	4"x6" plain worsted	$.015
	4"x6" plaid worsted	.010
		$.025



Doileys of Outline and Darning Stitch

Fifth Grade Garments

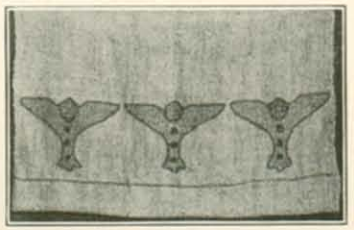
Original piece (furnished by pupil)		
Small crash bag	18"x27" crash	$.117
	1 skein linen floss	.020
	1 1-3 yards twine	.001
		$.138
Child's plain skirt (furnished by pupil)	3½ yards gingham	$.35
	1 spool thread	.045
		$.395



Fifth Grade Ornamental Darning

The original work in ornamental darning is put upon a variety of articles; bags, table covers, pillow covers, etc. The cost of a bag is given as an average of the cost of this work which is the Christmas work of the fifth grade and belongs to the pupil when finished.

Cost to pupil of ornamental darning	$ .138
" " " " skirt	.395
Total cost to school, per pupil	$ .063
" " " " class of twenty-four	1.512

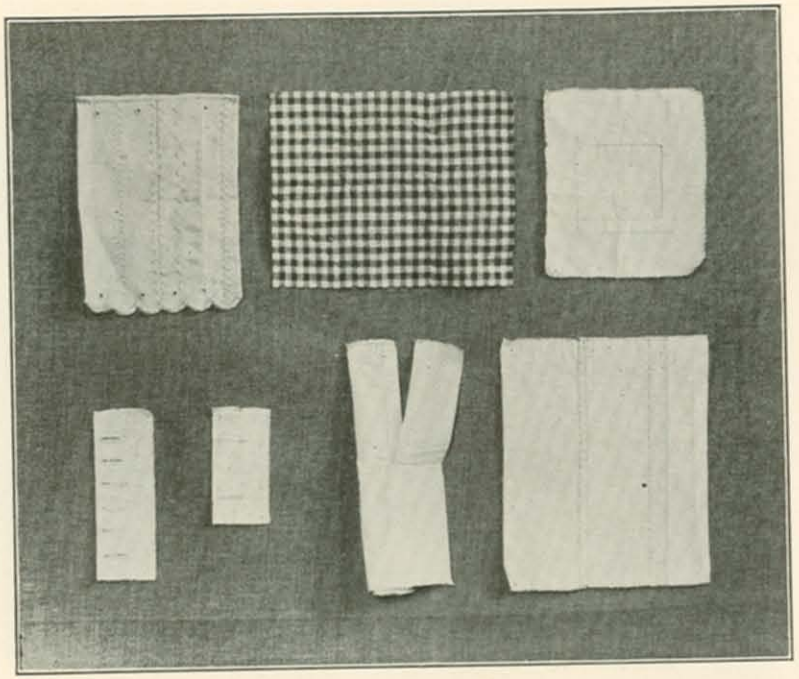


Fifth Grade Ornamental Darning

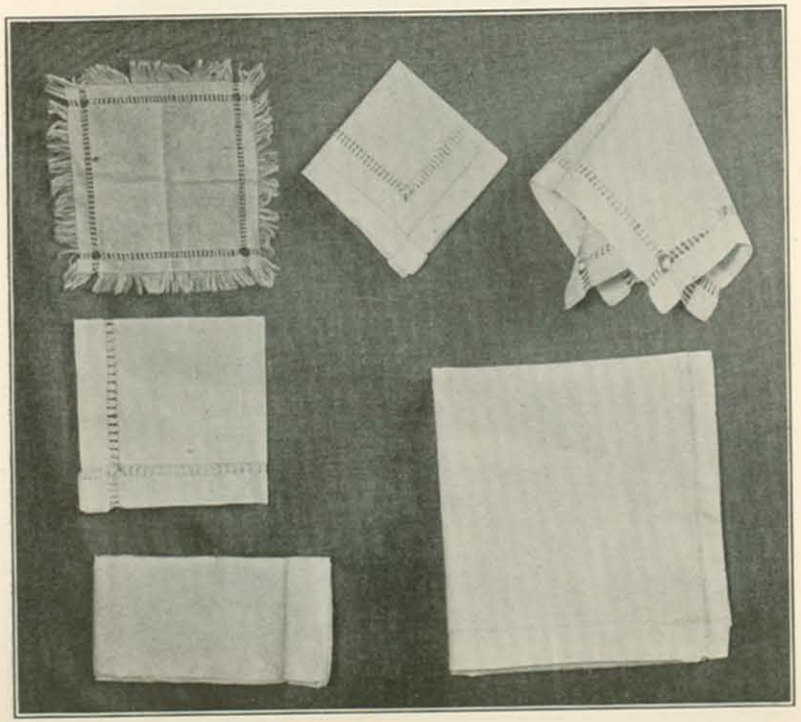
Sixth Grade

Sewing

	Amounts	Costs
Models and Articles of Use		
Square patch on muslin	6"x6" muslin	
	4"x4" "	$.004
Overseamed patch on gingham	6"x6" gingham	
	4"x4" "	.006
Linen piece, hemming and drawn work	4"x8" linen	.009
	1 spool thread	.045
Crash piece for fancy weaving	4"x4" crash	.003
	1-5 spool sansilk	.010
		$.077
Original piece (materials furnished by pupil) drawn work doiley	9"x9" linen	$.031
Flannel work, eyelets, stitches, scallops	9"x12" flannel	.037
	½ spool sansilk	.025
		$.062
Original piece—child's skirt, baby's jacket, or blanket	2½ yards outing flannel	$.25
Child's skirt	¼ spool sansilk	.012
		$.262



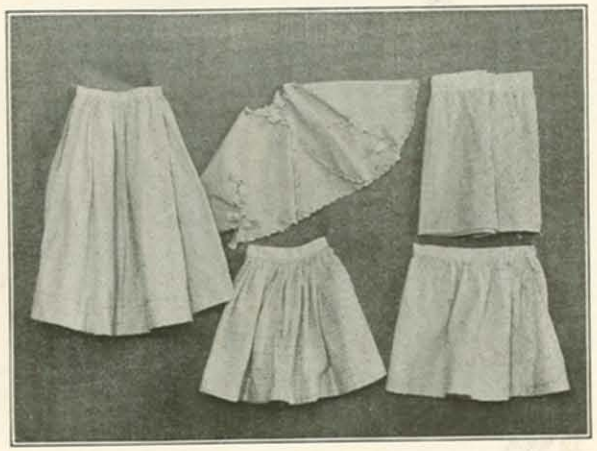
Sixth Grade Models



Sixth Grade Linen Work

The original work in the sixth grade is upon a variety of articles including linen and flannel articles and garments. The linen work, doileys, collars and cuffs, towels, etc., is introduced at Christmas time for Christmas work and belongs to the pupils.

Cost to pupils of linen and flannel articles	$ .293
" " school, per pupil	.139
Total cost to school, class of twenty-four	3.336

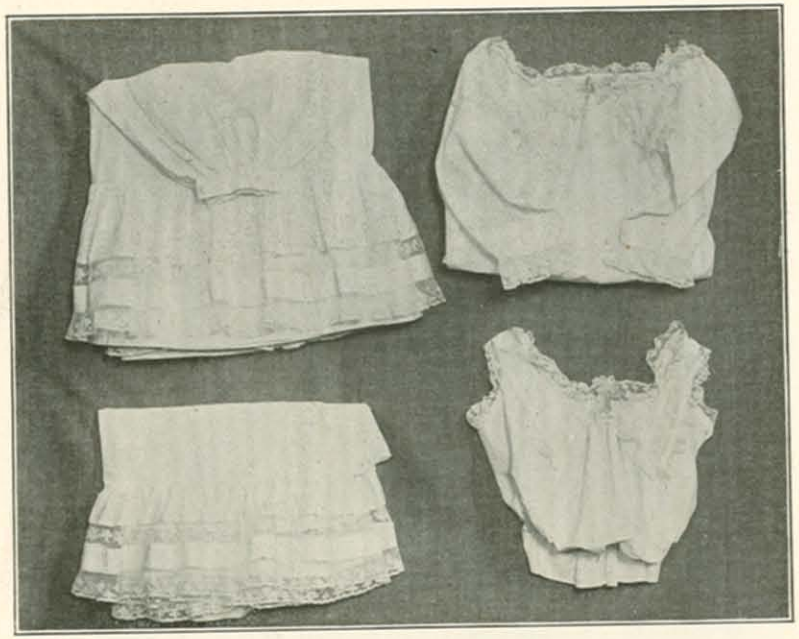


Sixth Grade Flannel Work

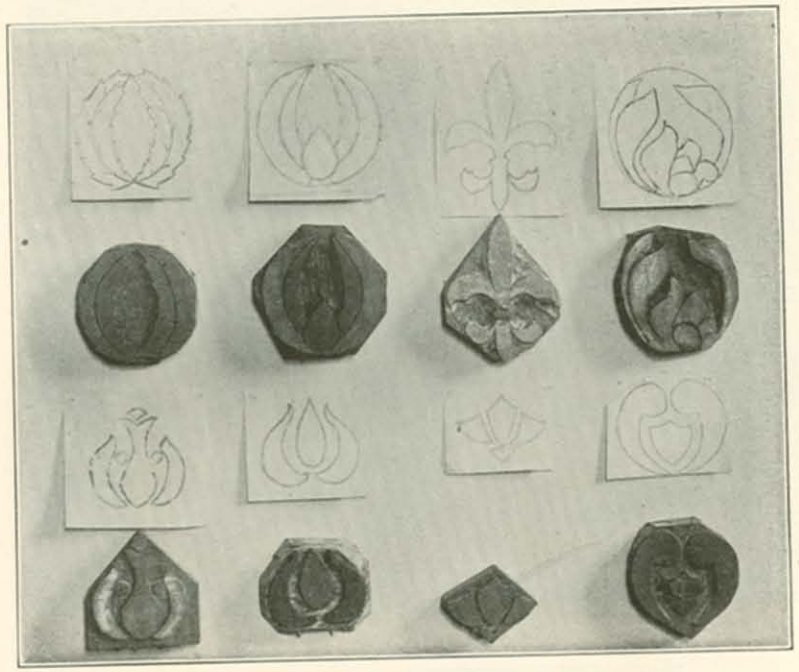
Seventh Grade

Sewing

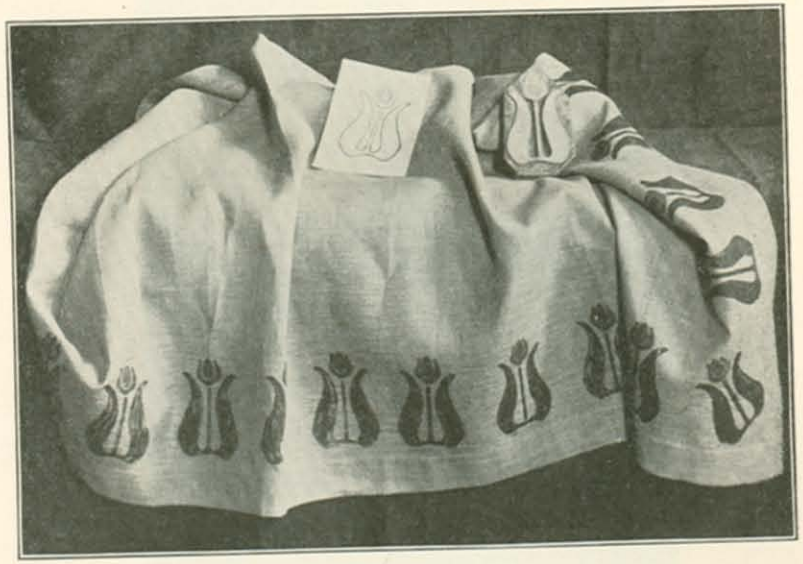
Models and Articles of Use	Amounts	Costs
Models of seams, plackets and buttonholes	6"x9" muslin	$.004
Drafted patterns	8 sheets paper	.016
Designs of garments	7"x9" drawing paper	.008
		$.028
Child's skirt	3 yards muslin	$.30
	1 yard long cloth	.125
	4¼ yards linen lace	.425
		$.85
Child's drawers	1½ yards muslin	$.15
	½ yard long cloth	.062
	2¼ yards linen lace	.225
		$.437
Child's underwaist	1¼ yards long cloth	$.156
	1¾ yards linen beading	.218
	2¼ yards linen lace	.225
		$.599
Child's night gown	5 yards muslin	$.50
	1¾ yards beading	.218
	2¼ yard lace	.225
		$.943



Seventh Grade Garments



Seventh Grade Designs and Blocks



Piano Cover, Block Printing

Block Printing

	Accessories	
	2 spools cotton	$.09
	¾ doz. buttons	.05
	Linen tape	.05
		$.19
Block printing—table cover	36"x36" linen	$.20
	4"x4" gum wood	.006
	Paint	.040
	Thread (linen)	.020
		$.266

Pupils of average ability can make three of the four garments in the underwear set. Pupils who work more rapidly make the four garments. The materials are furnished by the pupil.

The work in block printing is done for Christmas work, and the materials, with the exception of the wood block, are furnished by the pupils. As the variety of articles is great, a price upon a table cover has been used to show total cost of the work to the pupil.

Cost to pupil of material for underwear	$3.09
" " " " " " block printing	.266
Total cost to school, per pupil	.034
" " " " class of twenty-four	.816

Eighth Grade

Food Study and Recitation Room Work

Owing to lack of space an itemized list of the costs of cooking has not been given. The following outlines show the general plan of the work, and it is hoped at some future time that the costs will be worked out in full.

The Human Body: General structure and physiology of the lungs, digestive organs, and organs of excretion; special study of digestion, absorption, metabolism and assimilation.

The Essentials of Good Health: good food, pure air, pure water, personal cleanliness, and intelligent care of the body.

Foods: Definitions; physical and chemical properties; classification according to composition into proteids, carbohydrates, fats, mineral matters; discussion of each class including composition, digestion, use in the body, illustrations, and source of supply; the manner of growth, method of manufacture, and market value of common food stuffs under each class.

Air: Composition, physiological uses, oxidation in the body; Combustion—definition, essentials, fuels, products.

Water: Sources, kinds, chemical and physical properties; effects of heat and cold; physiological uses; use as cleansing agent.

Field of study preparatory to kitchen laboratory work: General care of the kitchen furnishings—tables, sinks, refrigerators, pantry, range, including the essentials of a good fire, laying of fire, management of drafts and dampers; care of utensils; washing of dishes, towels, etc.; study of tables of weights and measures and abbreviations.

Kitchen Laboratory Food Work

Experiments: Proteids—the effects of various degrees of heat upon various proteids; carbohydrates, division into starches and sugars; structure of each, effects of various degrees of heat upon each; fats—structure, effects of heat, etc.; deduction of principle of cooking of each food class.

Preparation of foods: Proteids—cooking of eggs; carbohydrates—rice, sago, etc.; fats, chocolate; combinations of food classes—cereals, hot breads, light breads, simple cake mixtures, cookies, soups of various kinds, spring vegetables.

First Year High School

Food Study and Recitation Room Work

General review of Eighth Grade work, with further elaboration of food classification and continued study of food stuffs with reference to food materials contained, classifications and preparation for the market.

Particular study of proteids: Meats—composition, food value, use in body, source, kinds—division into beef, pork, mutton, poultry, game; market appearance; cuts; cost; methods of cooking; methods of recooking each division; fish—composition, market appearance, preparation for use; methods of cooking, method of recooking; milk—composition, food value, use, adulterations, sterilization and preservation; products of milk—cream, butter, cheese; eggs—composition, food value, use, preservation, tests for freshness, methods of cooking; gelatine—composition, food value, use, how obtained, kinds, market appearance; method of using; principles of preparation.

Study of markets: Visits to various markets; study of cuts of meats; cost of materials; practical marketing; visits to mills and shops; buying of materials used by classes.

Study of food preparation and combinations: necessity for varied diet; reasons for cooking foods; planning of menus with reference to food value; estimation of cost of menus; comparison of economic food value of various foods.

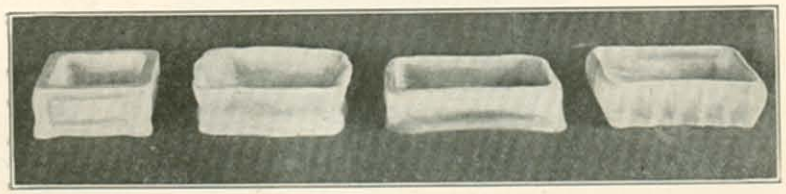
Field of study preparatory to work in kitchen laboratory: continuation of work commenced in first year; care of the dining room and its furnishings.

Kitchen Laboratory Food Work

Experiments: Effects of heat and cold, hot and cold water, acids and salt upon proteid foods studied; further experiments upon carbohydrates and upon yeasts.

Preparation of foods: Proteids—cooking meats and fish of all kinds in various ways; preparation of milk to be used as a food, including its combination with vegetables, eggs, junket, etc.; cooking of eggs in various ways; preparation of gelatine; carbohydrates—flour mixture of all kinds; fats—preparation of various foods by frying; combinations of food classes—breads, beverages, simple puddings, cakes, fall vegetables.

Assistance rendered other classes in the preparation and serving of meals.

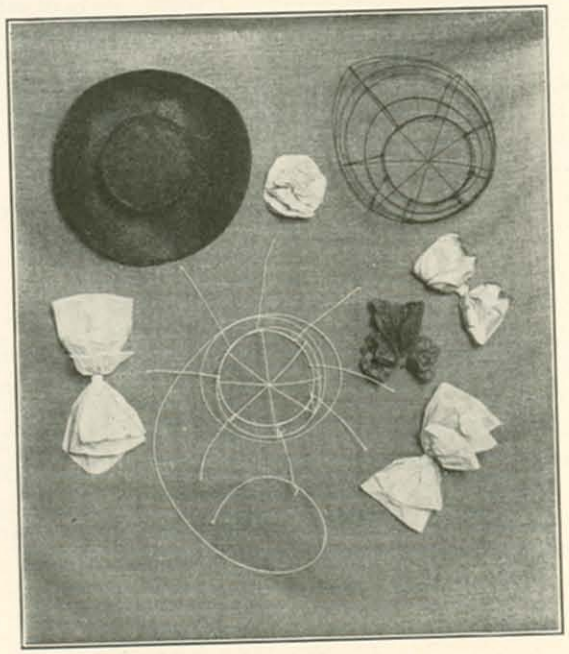


Second Year High School

Millinery

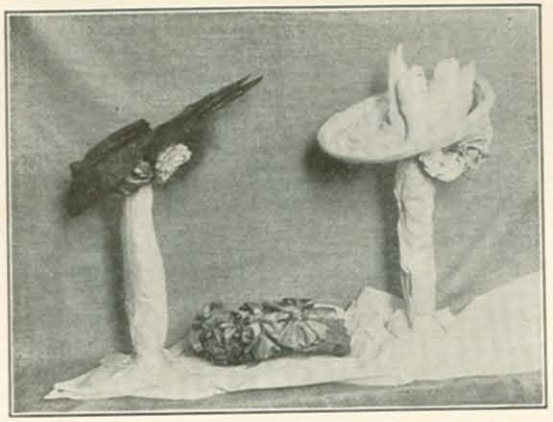
	Amounts	Costs
Models and Hats	1 sheet paper	$.010
Tissue paper bows	Old ribbons	
Ribbon bows	½ yard ribbon wire	.050
Renovation of silks, velvets, ribbons	Old materials	
Bandeaux	Buckram	
	Wire	.010
Renovating felt hats	Old hats	
Folds	1-16 yard canton flannel	.010
Buckram frames	½ yard buckram	.062
	2 yards wire	.020
Wire frames	1-3 piece wire	.058
	¼ yard lining	.050
		$.270

Winter hat (material furnished by pupil), old materials utilized, buckram frames used $2.00



Frames and Bows

Summer hat (materials furnished by pupil), embroidery hat	½ yard linen	.275
	Embroidery cotton	.150
	Wire	.100
	Lace or net	.500
	Ribbon	.700
		$1.725



Winter Millinery

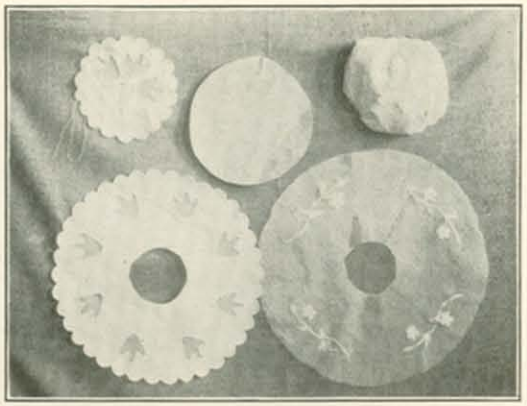
In estimating the cost of millinery, the costs of models are the only accurate costs that can be determined. In making the winter and spring hats the pupils furnish their own materials, and the costs have a wide range. The winter hats will vary from $1.50 to $3.00, the spring and summer hats from $1.50 to $3.00. A price is given on an embroidered summer hat. This is about the average.

Cost to pupil of two hats	$3.75
" " school, per pupil	.27
" " " class of twenty-four	6.48

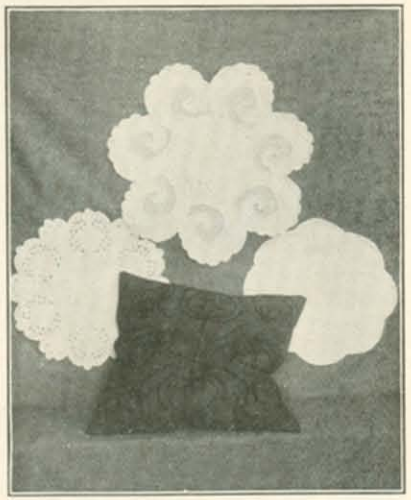
Needlework

Fine needlework, embroidery, drawn work, etc., costs the school practically nothing. The work is done upon embroidered hats and waists used in millinery and dressmaking, upon towels, table furnishings, collars and cuffs, pillows, and articles of interior decoration. These articles are all furnished by the pupils or are made for use in the Domestic Science and Art departments of the school.

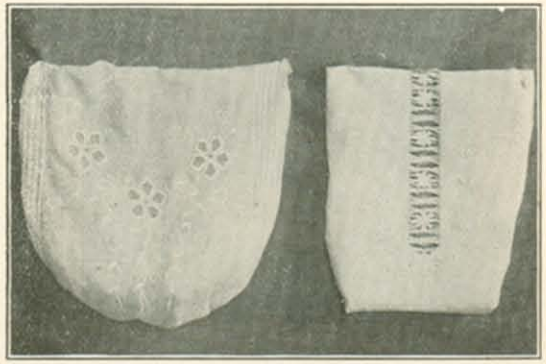
Summer Millinery



Needle-work for Millinery



Needle-work

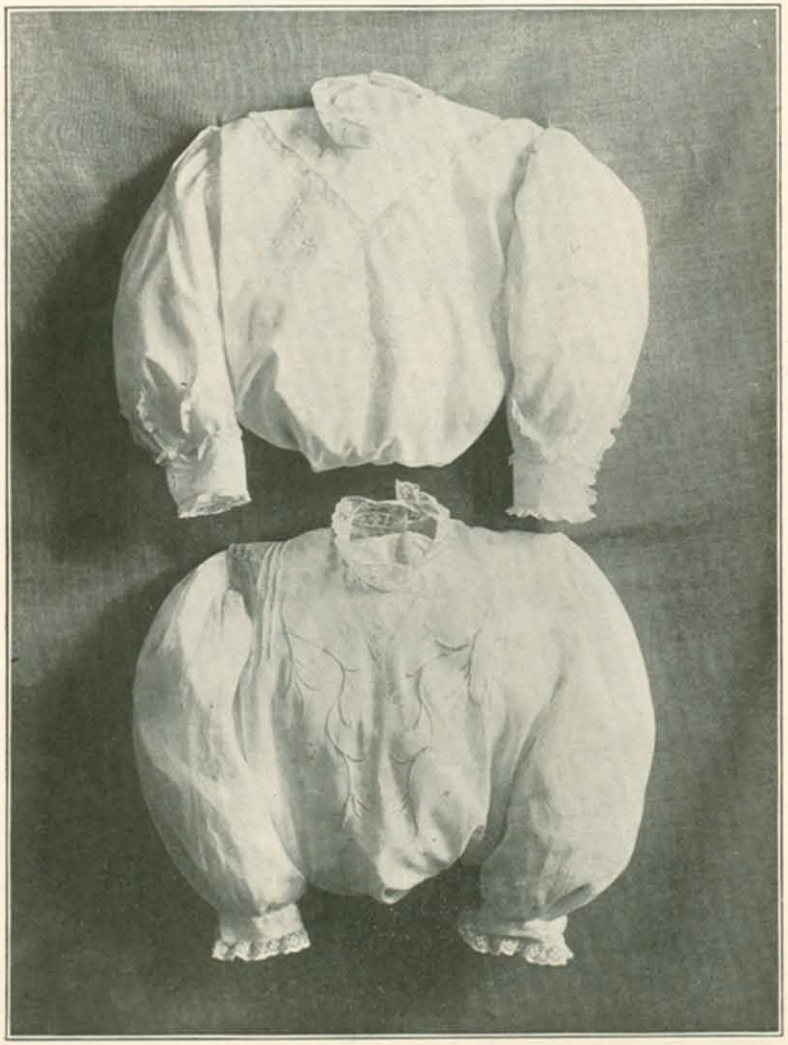


Needle-work on Waists

Third Year High School

Dressmaking

Articles of Use	Amounts	Costs
Design of corset cover	7"x9" drawing paper	$.002
Fancy corset cover	1¼ yards long cloth	$.187
	1½ yards insertion	.15
	3 yards lace	.30
	1½ yards beading	.15
	2 skeins embroidery cotton	.07
	1 spool cotton	.045
		$.902



Embroidered Waists

Embroidered Gown and Hat

Tailored Suits

Design of shirt-waist	7"x9" drawing paper	$.002
Drafted shirt-waist pattern	2 sheets pattern paper	.004
		$.006
Tailored shirt-waist	3½ yards cotton cloth	$.45
	1 spool cotton	.045
	½ doz. buttons	.065
		$.560
Design of skirt	7"x9" drawing paper	$.002
Drafted skirt pattern	4 sheets pattern paper	.008
		$.010
Tailored skirt	4 yards woolen cloth	$3.00
	1 spool sewing silk	.10
	1 spool sewing cotton	.045
	¼ card hooks and eyes	.025
		$3.170
Design of summer dress	7"x9" drawing paper	$.002
Summer dress	10 yards material	$1.250
	5 yards trimming	.750
	2 spools cotton	.090
	1½ doz. buttons	.180
		$2.270

Accurate estimates of the costs of dressmaking cannot be furnished as the materials are furnished by the pupils, and the costs vary according to the selection of material, design, and size of pupil. An average price has been used in the computation in order that a fair idea of the costs of materials may be given. Practically the only cost to the school is in drawing and drafting paper, as the pupils usually are in need of the garments and are willing to furnish their own material.

Cost to pupil of dressmaking materials	$6.902
" " school of dressmaking materials, per pupil	.02
Total cost to school of dressmaking materials, class of 24	.48

Fourth Year

Food Study and Recitation Room Work

Study of Dietaries: Balanced rations and practical menus for use in the home.

Serving of Food: Table furnishings—including linen, silver, crystal and china; laying of table; serving of breakfast, dinner, lunch and supper; duties of host, hostess and waiter; care of table furnishings.

Study of markets: Continuation of work commenced in previous year with, in addition, the marketing for all meals served by the class; the keeping of expense accounts, and the computation of exact cost per meal per person and the total cost for one day.

Study of food materials: Fruits—use as food, value as food, use of raw fruits, use of preserved fruits; methods of preservation—drying, canning, preserving, pickling—the use of each and principles and methods involved; care of fresh and preserved fruits; salads—classes, dressings,

treatment of each class, study of materials used, garnishing and serving; pastry—composition, value as food, kinds, methods of preparation; puddings—food value, palatability, usefulness, kinds, materials used, methods of preparation; cakes—composition, value as food, kinds, material used, methods of preparation, including combination of materials; ices and ice cream—division into classes, sherbets, ices, creams, etc.—food value, materials used, methods of preparation, freezing and serving of each.

Preservation and adulteration of food materials: Preservation by means of elevation and reduction of temperature, exclusion of air, compression, drying, extraction, use of antiseptic substances, use of acids and gases, use of special preservatives; adulterations not injurious to health; use of inferior goods; increase of bulk by use of cheaper food materials; adulterations injurious to health, including use of colors, chemical preservatives, materials having no food value; effects of food preservatives and adulteration; remedy—knowledge of food materials.

Field of study preparatory to Invalid Cookery: Study of conditions existing in common diseases; physiological effect of various food materials; hygiene and care of the sick room; the arrangement of dietaries suitable to different conditions; serving of foods.

Kitchen Laboratory and Practical Food Work

Preparation of foods: Fruits—canning, preserving, pickling, and jelly making; salads—preparation of fruits, vegetables and meat salads; oil and egg dressings; pastry—pies and puff paste; puddings—creams, baked, boiled, steamed, and custard with various sauces; cakes—loaf and layer, with various fillings; frozen desserts—ices, sherbets, ice cream of various kinds; combination of foods in the preparation of meals.

Invalid cooking: Gruels, meats, ices, drinks, broths; preparation of the invalid tray.

Preparation and serving of meals: Marketing for, preparing and serving three meals by each group of girls. A purse of $2.50 is allowed, and from this provision must be made for six invited guests. The members of the class act as host, hostess, and waiters. Meals are served in the school dining room.

Household Management

Location of house: Essentials—sunlight, free circulation of air, dryness; discussion of elevation of site, soil, location with regard to contamination.

Selection of house: Country house—character of soil, water supply, source of contamination; city house—condition of pavements, gutters, soil and drains.

Building of house: Materials available; conformity to use; convenient arrangement of rooms; sanitary arrangement of cellar, water supply, drainage, ventilation, lighting, heating.

Drainage and plumbing: Canons of good house drainage—application in selection or building of house; qualities of a good system—location of fixtures, arrangement, use and care of various pipes and fixtures.

Ventilation: Necessity for pure air; objects of ventilation; real ventilators; makeshift ventilators; ventilation of various rooms and parts of the house.

Water supply: Necessity for absolute purity; city supply; individual supply including advantages and disadvantages of various kinds of wells and cisterns, their use and care; filtration and practical tests of condition of water.

Heating: Objects; methods, including a discussion of use of hot air, steam and hot water, stoves and grates; average temperature of various rooms.

Lighting: Objects; necessity for supply of air; methods, including use of kerosene, gas, electricity; care of lighting apparatus; comparison of value of various methods.

Furnishing: Fundamental principles of good furnishing; effect of furnishing upon health, comfort, and development of family; consideration of floors, walls, windows with reference to use, finish; materials used, choice of color, designs, etc.

Furnishing and care of different rooms of house: Kitchen—furniture, floor, walls, windows, sink, cabinets, tables, cupboards, lights, pantry; special furniture that contributes to comfort, such as high stools, bins, boxes, jars, etc.; care of all furniture including daily and weekly cleaning, and annual cleaning and renovating of walls, and floors; dining room—floors, windows, furniture, including table furnishings; care, weekly sweeping, dusting, crumbing after meals, lighting, heating and airing; sleeping rooms—floors, windows, walls, closet, furniture, including furnishings of bed; care, weekly cleaning, removal of soiled clothes, making of beds, removal of slops, dusting, airing, heating, and lighting; bathroom—floors, walls, windows, cupboards, fixtures (simple, easily kept clean, in sight); care, airing and ventilation, thorough cleaning and flusing, use of disinfectants and deodorants.

Planning of house of moderate size, using principles worked out previously; furnishing of the same, with selection of color schemes and furniture adapted to use of house.

Household management is given five times a week in forty-five minute periods during the second semester of the senior year of the high school.

Summary of Costs

Sewing, Dressmaking, Millinery

	Per Pupil	No. Pupils in Class	Per Class
Fourth Grade	$.137	24	$ 3.29
Fifth Grade	.063	24	1.51
Sixth Grade	.139	24	3.34
Seventh Grade	.034	24	.82
Second Year High School	.27	24	6.48
Third Year High School	.02	24	.48
Totals	$.663		$15.92

A PRACTICAL SCHOOL FOR HOME-MAKERS

SINCE the Domestic Science Training School for teachers has been organized, an extensive correspondence has developed the fact that there are many young women who would be glad to take a systematic course of training in domestic art and science for its practical and cultural value, but without any intention of becoming teachers. To meet this demand provision is being made for organizing next year a practical school for home-makers, with courses planned to give a thorough training for the organization and administration of the affairs of the home through the application of scientific, economic and artistic principles.

There are scientific principles which should be applied in the choice of foodstuffs and foods, in their preparation and combination, and in the use of foods appropriate to varying conditions of age, health and environment. There are scientific principles which should control the installation and care of plumbing and appliances for heating, lighting and ventilating houses that should guide to some extent in the selection of furnishings and in the care of furnishings and of the house itself, as well as of all the materials found in a house, whether food, clothing or furnishings.

There are artistic principles which should be observed in the planning and arrangement of the rooms of the house and in their decoration and furnishing.

There are economic principles which must be recognized in the application of both the scientific and artistic principles and in the practical administration of the affairs of the household.

It will be the purpose of this school not only to make the students familiar with these principles, but with their application in a practical way.

THE COURSES OFFERED WILL INCLUDE:

1. *A study of food and foodstuffs,* involving a consideration and comparison of food values and of market values; the correct combination of food material; the selection and care of foodstuffs; the best method of preserving foods; tests for purity of foods; dietetics, or the study of the adaptation of food to age, health, occupation and environment. The work in the preparation of foods will cover plain and fancy cooking and invalid cooking, and the preparation and serving of foods of all kinds.

2. *A study of textiles,* and training in the operations necessary for the transformation of textile materials into articles of clothing, or for

decorative and house furnishing purposes. This will embrace hand and machine sewing; cutting, fitting and making of garments; and millinery.

3. *Artistic decoration and furnishing of the house.* This course will not be given for the purpose of training professional house decorators, but for the development of such taste and judgment in the selection and arrangement of decorations and furnishings as ought to be possessed by every woman who is to have charge of a home. It is not the purpose to develop taste that can be satisfied only by expenditure beyond appropriate limits, but to make clear that good taste may be exhibited in the humblest home and with a modest expenditure of money.

4. *Household management,* involving the organization and management of the affairs of the household. Among these affairs may be mentioned the selection and purchase of foodstuffs, clothing and articles for furnishing and decorating the home; the practical and economical care of these things; the securing and maintaining of sanitary conditions; the care of different apartments of the house; the various cleansing operations necessary in the household; the apportioning of the income among the various expenditures for the home; and the keeping of household accounts.

5. *Home nursing and emergencies,* including a consideration of the questions of home nursing which arise in every household: The proper feeding, clothing, and care of infants and young children; the care of members of the household during illness; the care of the sick room and its furnishings; treatment of accidents, and the proper action in case of emergencies; the prevention of disease and the use of disinfectants.

6. In addition to the practical courses above given, definite instruction will be given in English and literature, especially in the literature of domestic art and science; in freehand drawing and color work, in mechanical drawing and applied design.

A corps of experienced teachers trained not only in the theoretical, but in the practical phases of the work will have charge of the instruction in the different courses. Admirable laboratory facilities will be provided for all phases of the scientific and practical work. A special feature is a nine room house adjacent to the school buildings, to be used exclusively for purposes of laboratory work in the course in house decorating and furnishing.

In the work of this course students will prepare designs for the decorating of the different rooms and will then take charge of the decoration in accordance with the designs adopted.

Students attending this school will make their homes in dormitories constructed upon the cottage system. Each cottage will be in charge of a competent person and will accommodate a limited number of girls. It is the plan to furnish, as nearly as possible, ideal home conditions for living while students are attending the school. Each cottage will be not only a home, but a laboratory in which many of the lines of training may be practically carried out. Different styles of decoration will be used in different rooms, and the furniture for each room will be selected to harmonize with the decorative effect. These different styles of decorating and furnishing will be used for illustrative purposes in the work of the course.

Each student will have an opportunity and will be required to become thoroughly conversant with the different operations necessary in the practical care of the different rooms in the cottage.

At the proper stage of advancement students will be given charge of the preparation of menus, selection and purchase of food for the table and the serving of food. This work will not be required of any student beyond the point where it ceases to have an educational value.

It is believed that the advantages offered by this school will be appreciated by many people who believe that home making is a serious business and that specific preparation for it is really worth while.

THE BULLETIN OF THE STOUT TRAINING SCHOOLS

THE Bulletin is published quarterly in the interests of school handwork. It is a medium for the discussion of some of the practical and immediate questions relating to the administration of manual training, domestic science, and kindergarten work in the public schools. Problems regarding these subjects are considered from the standpoint of superintendents of schools, teachers of these subjects in public and in private schools, educational workers interested in the school arts and the general public as far as there is a desire to know more of the conduct of these branches in the schools.

Later numbers of the Bulletin will contain details of handwork courses in the Menomonie public schools, showing methods of carrying on the work; syllabi of courses in the Stout Training Schools; a selected manual training library; plans and descriptions of manual training schools; illustrated courses in drawing and design; and lesson plans for school handwork.

The subscription price of the Bulletin is fifty cents per year. Sample copies will be sent on request.

Address all communication regarding the Bulletin or the courses in the Stout Training Schools to

L. D. HARVEY,
Supt. Stout Training Schools,
Menomonie, Wisconsin.

CALENDAR

First Semester begins September 2, 1907; ends January 17, 1908.
Second Semester begins January 20, 1908; ends May 29, 1908.
Holiday Vacation begins December 21, 1907; ends Jan. 4, 1908.
Spring Vacation begins March 14, 1908; ends March 22, 1908.